ELECTRICAL WORLD

News Issue

JULY 24, 1950 • OUR 76th YEAR

A McGRAW-HILL PUBLICATION

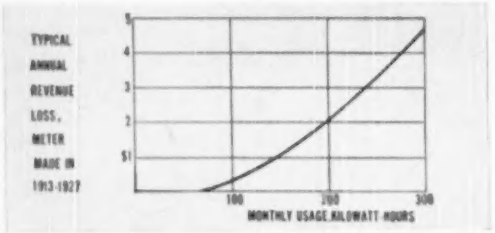
Edward L. Shutts, New President of the Missouri Valley Electric Association

Market Break Sends Yields Zooming Page 4

Korea Booms Industrial Sales Page 30

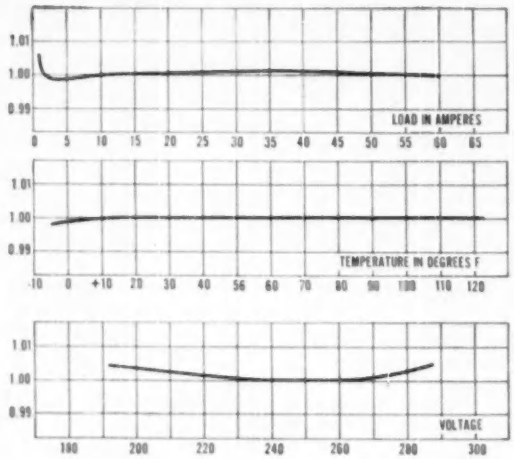
Be thrifty—use the I-50

NO FREE KILOWATT-HOURS!



This curve illustrates the expensive economy of using old watthour meters. Because of under-registration at high loads, lost revenue can amount to several dollars per year per meter. Adjustments can not prevent this loss in revenue —only a major rebuilding operation can do that. But fortunately, there's a better way . . .

With the General Electric I-50, today's most modern meter, there is no under-registration at high loads—no free kilowatt-hours. As shown in the characteristic curves at the right, accuracy under variations in load, temperature, and voltage is mighty close to perfect. This, in turn, means that your billing will be close to perfect.



Ratio of I-50 readings to true kilowatt-hours; I-50 meter rated 15 amperes, 240 volts, 60 cycles, 3 wire, at unity power factor.

time to retire . . . old watthour meters?

It may cost you more to keep an old watthour meter in service than to replace it with a modern I-50. Here are the reasons:

1. **Loss of revenue at increased loads**
2. **Excessive operating expense**
3. **High cost of rebuilding and modernizing**

Adopt the I-50—today's most modern meter—as your standard. It saves more—by proper overload registration. It saves more—by its design for stability of accuracy, less maintenance. Ask your G-E representative for full information. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

The Electrical Week

As President Truman spelled out the first steps of national mobilization, the electric utility industry, along with the rest of the country, grimly prepared to roll up its sleeves. It was determined power again would be neither "too little nor too late." The industry had weathered economic controls like those on schedule before (see below). It's first job obviously was to revise plans to fit conditions now looming (p 30) . . . And it was faced by a skittish money market in which common stock yields had been driven to their highest point in 18 months. This meant financing of possibly vital plant and equipment would be tougher (p 4) . . . With new scientific data on color television in its hands, Federal Communications Commission was in a quandary. Should it make its long-awaited decision on color TV despite the possibility production restrictions might stop manufacture of sets? (p 11) . . . Output pushed above 6 billion kwhr again in the week ended July 15 after a brief dip. It may be a long time before it dips significantly again (p 19) . . . Two power companies in Oklahoma finally worked out a "truce" of sorts with Interior's Southwestern Power Administration. They'll carry SPA energy and supply off-peak power. They'll get SPA power—and no federal transmission lines in their service areas (p 6).

• • •

New boss of Interior Department power agencies is Assistant Secretary William E. Warne. He got the job when Secretary Chapman assigned specific duties for his top aides, gave Warne general supervision of the Department's water and power development activities. Previously Warne shared responsibility for power with Assistant Secretary C. Girard Davidson, who now has been detailed to mineral resource work.

President Truman's mobilization program affects electric utilities at three points: New plant and equipment, residential and industrial consumption of power, and net revenues. Allocations and priorities for essential materials, including steel and non-ferrous metals, will affect the flow of power equipment. So will limitations on uses of vital materials (the old "L" orders). But electric equipment probably will get high priority again. Industrial use will soar as plants get orders for the additional $10 billion in military equipment. Residential load growth will be limited indirectly by restricting non-essential production and credit for appliances (Regulation W), and cutbacks on federal aid for new housing. New taxes, now being drafted, will pinch everyone. An excess profits tax is likely. These are long-range—not short-term—prospects. We are arming to stop Communism everywhere, not just in Korea. And present controls and tax plans are the minimum. They will stiffen greatly if war spreads.

New Hampshire Gas & Electric Co, Portsmouth, is now operating as the New Hampshire Electric Co.

Competition between gas and electricity can be friendly. A New York City appliance dealer is giving an electric coffee maker as a premium with each gas range sold.

Hearings on a declaration of intention by the Brazos River Conservation and Reclamation District to construct and operate three dams on the river in Texas have been postponed until Sept 13. The district, which sought the postponement, will contend that the proposed construction does not come under FPC jurisdiction.

Notes From The News

The New Zealand cabinet has approved £80,000 for exploratory work to determine whether geo-thermal steam in Rotorua—in the heart of New Zealand's geyser land—can be harnessed for the generation of electric power and other industrial purposes. Bores are being sunk to tap the underground power . . . The California Water Resources Board has ordered its legal staff to study the possibility of licensing rainmakers. The move was taken with a view to encouraging responsible and discouraging irresponsible rainmakers . . . Brockton (Mass.) Edison Co completed three home service programs for 2,000 high school students in seven cities in its area during the past academic year. The programs covered kitchen planning, fabrics, and use of plug-in appliances for parties. Programs on lighting, utility operation, and safety were also held, with 3,000 students attending . . . Eugene S. Loughlin has been elected chairman of Connecticut's Public Utilities Commission for the period ending June 30, 1951 . . . American business firms will have easier access to non-secret atomic energy technical reports under a new distribution plan announced by the Atomic Energy Commission and the Department of Commerce. The Office of Technical Services of the Commerce Department will become the sales agency and reference source for non-secret AEC reports.

Yields on Common Stock Climbing

War-Unsettled Stock Market Darkens Prospects for 1950 Utility Financing; Brisk Pace of New Money Raising Set in First Half-Year Already Slackening

THE SHARP STOCK MARKET break has sent yields on electric utility common stock soaring since the beginning of the Korean war.

By July 13 they had made up all their decline of this year and stood at near the level of March, 1949 (See chart). The rise in ELECTRICAL WORLD's indexes since the end of the first quarter totaled 9% for first quality common stock, 18% for second quality, and 21% for third quality. This reflected a sharp price decline. The Dow-Jones utility average was down almost 15% from its 1950 high, reached during the first quarter. That drop was slightly more than the 13.5% decline shown by industrials.

Common stock prices began to fall in the final week of June, immediately after the Korean fighting began. At the end of the second quarter the Dow-Jones utility average was 4.8% below its level at the end of the first quarter and 1.6% below that of the end of 1949. ELECTRICAL WORLD's yield indexes showed a 3% rise for first quality common in the second quarter, an 11% rise for second quality, and a 12% climb for third quality.

But the principal change came this month. On July 13 the Dow-Jones utility average was down 8.8% since the beginning of the year and 11.8% since the end of the first quarter. Early last week it had recovered somewhat but still was far from making up the loss. Yield indexes were up correspondingly.

Since the outbreak of fighting in Korea three electric utilities withdrew large issues already in registration because of the unsettled market. Consumers Power Co canceled its sale of $15 million of common stock; Public Service Co of Colorado withdrew $7 million of debentures and $10 million of preferred; and the Southern Co deferred sale of 1 million shares of common.

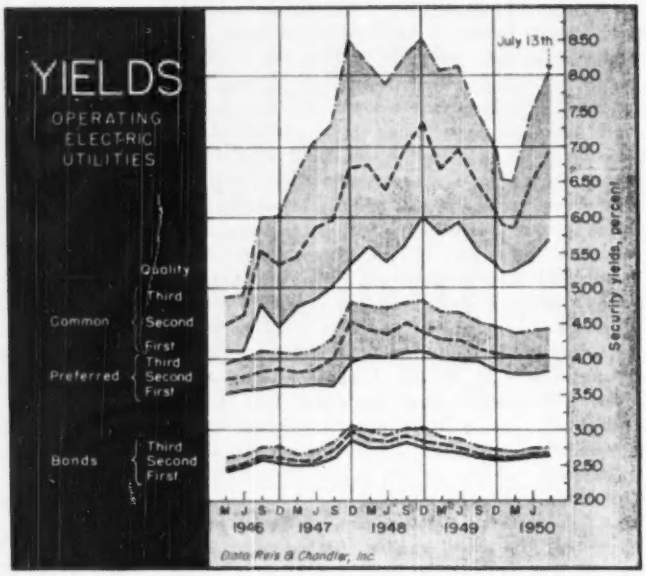
These developments made it seem unlikely that the brisk financing pace set by the utilities in the first half of the year could be maintained. So far this year electric companies have raised about $205 million in new money (See table), a figure that compares favorably with the rate for 1949, when about $350 million was raised.

The utilities now face the prospect of meeting 1950 capital requirements only at a high cost or by worsening their capital structures. A major factor in the plummeting stock market was fear of higher corporate taxes. Increased taxes might well hit utilities even harder than other industry because of their less flexible rates.

Preferred stocks, on the other hand, have shown surprising resistance to the market crisis. ELECTRICAL WORLD's preferred stock yield indexes moved only slightly this year and on July 13 were somewhat below January 1 levels.

Bond yields also have failed to reflect the turbulence of the common stock market. They showed a slight tendency to rise during the second quarter, an expected result of sales of Treasury bonds to depress the price. However, utility bonds have done better than the Treasuries. Their yields have not risen so much as that of the government's which went from 2.34% to 2.42% in the quarter.

Other highlights of second quarter electric utility financing included a shift from equity to debt. In the first quarter utilities raised $128,990,000 of new money from sale of common stock and $135,250,000 from bonds and debentures. During the second quarter the



RAPIDLY RISING common yields forecast trouble for electric utilities seeking to raise new money. Chart above underplays sharpness of climb in recent weeks. Lines through June, 1950, show EW indexes at ends of quarters indicated; final period is only two weeks

Public Offerings
Electric Utility Securities
(Totals Estimated in Thousands of Dollars)

	Second Quarter of 1950		
	New Money	Other	Total
Bonds			
Mortgage	$233,500	$175,200	$408,700
Notes and Debentures		27,000	27,000
Preferred Stocks	81,041	44,535	125,576
Common Stocks	76,374	46,641	123,015
	390,915	293,376	684,291

	FIRST QUARTER OF 1950		
	New Money	Other	Total
Bonds			
Mortgage	$86,250	$36,500	$122,750
Debentures	49,000	----	49,000
Convertible			
Preferred Stock			
Non-convertible	61,802	30,413	92,215
Convertible			
Common Stock	128,990	43,348	172,338
	326,042	110,261	436,303

picture was reversed; $233.5 million came from debt financing and only $76,374,000 from common.

There was a considerable increase in debt refunding. Some $187.5 million worth of bonds were refunded at lower interest rates in the second quarter compared to about $36.5 million in the first. This was made possible by the continued low level of bond yields.

•

Lake Mead Level Seen 19½ Ft Below July 1949

The level of Lake Mead is expected to be 19½ ft lower on July 31 than it was on the same date a year ago. The Bureau of Reclamation expects the spring runoff from the Colorado River to be the lowest since 1946. There will be sufficient water, however, to meet all hydroelectric, farm irrigation, and domestic requirements throughout the year.

From April 1 to July 31, nearly 7½ million acre-ft will have flowed into the reservoir above Hoover Dam, the Bureau forecasts. Last year's runoff for the same date was 10.7 million acre-ft.

The April-June inflow to Lake Mead was 6.1 million acre-ft, lowest since 1946. Forecasted inflow for July is 1.35 million acre-ft. The lake is expected to have an elevation of about 1177 ft by the end of July. Last July 31 the elevation was 1196.6 ft.

Usable storage on July 31 of this year will approximate 20,820,000 acre-ft, about 2.6 million acre ft less than on July 31, 1949.

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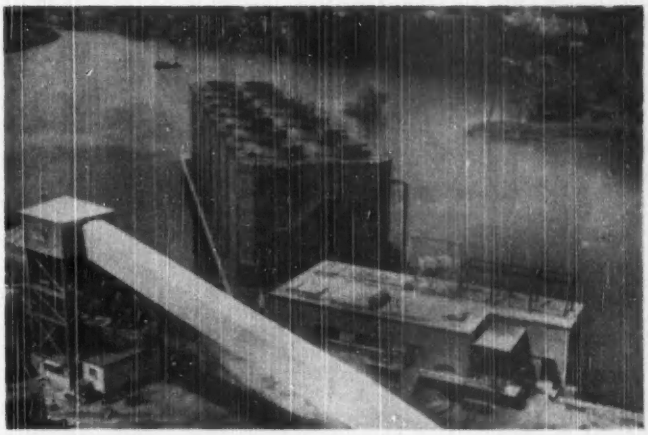
Court, SEC Asked to Rule on Utility's Tie with GE

The New Hampshire Public Utilities Commission has agreed to ask the State Supreme Court and the Securities and Exchange Commission to determine whether or not the Public Service Co of New Hampshire and General Electric Co are "affiliated" in the legal sense.

Opponents of a pending rate increase for Public Service have raised this question. The utility denies that GE's indirect financial interest through holding company investment in Public Service can be interpreted as constituting anything like control.



LARGE COOLING TOWER has been built for Worcester County Electric Co's Webster St station. The tower, which is 250 x 60 x 45 ft and has 14 fans, is needed to recirculate condensing water. When a steam turbo-generator is installed in the fall the station will have a 98,425-kva rating. In foreground can be seen coal conveyor gallery and screen house

FPC Closes Hearings in Roanoke Rapids Case

Amid new protests from the Interior Department, the Federal Power Commission closed its hearings on the application of Virginia Electric & Power Co to develop hydro power at Roanoke Rapids.

Reopened a month previously at Interior's request, the hearings produced new testimony by federal officials opposing the recommendation of an FPC examiner that the application be approved.

A new threat of a delay came as Interior asked the commission to permit still more new exhibits.

If the commission grants the new request of Interior, more hearings will be held. In any event, new briefs will be filed and a supplementary ruling rendered by the examiner before the case goes to the commission for a verdict.

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Growth in Rural Power Use Forecast for Georgia Area

Large growth in rural power use is forecast for Georgia's upper Piedmont area in a new U. S.-state study.

Average consumption will more than double that of 1947 by 1960 and total consumption will triple, according to Oscar Steanson of the Georgia Agricultural Experiment Station and Joe F. Davis of the U. S. Department of Agriculture.

Tracing growth of load on an average farm, their study reports that lights, radio, and small appliances came soon after a farm was electrified. More expensive equipment was acquired much more slowly. About 90% of power used was for household purposes, with some use in dairying and poultry operations.

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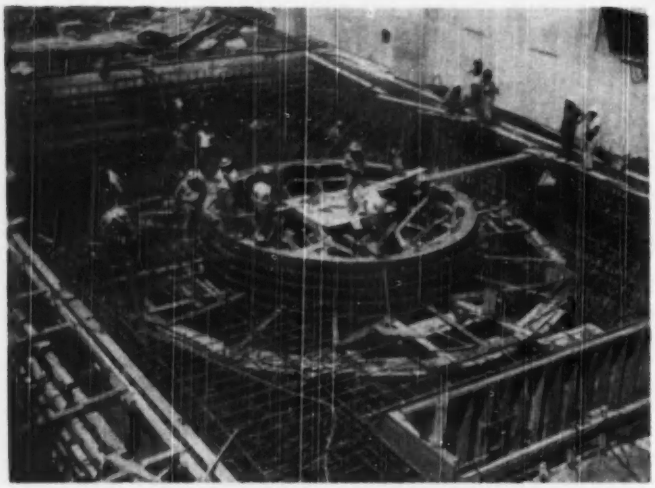
Arizona Co-ops Merge To Get Colorado Power

Seven co-ops in Arizona have consolidated into one big system with an estimated worth of $8 million in an effort to obtain fullest power allotments from Colorado River plants and to form a united front against private power interests. They have incorporated as the Grand Canyon State Electric Cooperative.

The seven are Trico of Tucson, Graham County, Sulphur Springs Valley of Cochise, Duncan, Mohave, Verde, and Novopache. They are organized on a non-profit basis to negotiate for Hoover Dam and Davis Dam power.

ELECTRICAL WORLD, Published weekly by McGraw-Hill Publishing Company, Inc. Publication Office, 99-129 North Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 West 42nd St., New York 18, N. Y. James H McGraw (1860-1948), Founder; Curtis W McGraw, President; Willard Chevalier, Executive Vice President; Joseph A Gerardi, Vice President and Treasurer; John J Cooke, Secretary; Paul Montgomery, Senior Vice President, Publications Division; Ralph B Smith, Editorial Director; Nelson Bond, Vice President and Director of Advertising; J E Blackburn, Jr, Vice President and Director of Circulation. Subscription rates: Single copy 35 cents. In the United States, $6 a year, $9 for two years, $12 for three years. Canada, $7 for one year, $11 for two years, $14 for three years. (Canadian money, at par.) Pan-American countries, $15 for one year, $25 for two years, $30 for three years. All other countries $20 for one year, $30 for two years, $40 for three years. Entered as second-class matter, November 16, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in U. S. A. Copyright 1950, by McGraw-Hill Publishing Company, Inc. Permission required to reproduce any of contents. Cable address McGRAW-HILL, New York. Member ABP. Member ABC.



WORKMEN at Davis Dam prepare form for circular opening between governor gallery and generator room for the third unit of the power plant. Part of the finished pour for the second unit can be seen in the background. The project is slated for completion this year

Oklahoma Utilities Sign Up with SPA; Contract Ends 6 Year Negotiation

THE "OKLAHOMA CONTRACT"—long a title representing mere negotiations between federal and private power in the Southwest—finally has become a reality. It now represents a 20-year agreement between the Interior Department's Southwestern Power Administration and the two major utility firms of Oklahoma.

The document was signed July 13 after six years of negotiations between SPA and companies of the area. The agency had been dickering intensively for nearly a year with the companies involved in the new contract, Public Service Co of Oklahoma and Oklahoma Gas & Electric Co.

Principal features of the agreement include:

1. Delivery of federal energy to SPA customers over facilities of the two companies.

2. Sale by the companies of up to 50,000 kw of off-peak energy to SPA.

3. Delivery of SPA energy to the companies at the rate of 1.65 kw for each 1 kw of demand of federal customers served by company facilities.

4. Sale of excess energy and capacity by either party to the agreement when either deems it has an excess.

One immediate effect of the agreement was the abandonment of SPA plans to build a number of transmission lines in the service areas of the two companies. Several days before formal announcement of the contract the Senate Appropriations Committee sliced some $6 million for this construction from SPA's budget for the current fiscal year (EW, Jul 17, p 76).

The contract was formally concluded in Tulsa after Interior Secretary Chapman gave his approval. Chapman had rejected several other proposals, at least one of which had been okayed by both SPA Administrator Douglas Wright and the companies.

Chapman's principal objection to one of these proposals was that it provided, in an "anti-raiding" section, for payments to the companies for losses incurred by them in carrying federal energy to certain customers they already were serving. The new contract contains no such proviso. Instead, there is a somewhat vague clause, apparently aimed at preventing only rapid takeover of municipal customers of the companies.

This section specifies that SPA may not serve a "public body" until 24 months after such body has "taken the necessary action to expend funds" for purchase or construction of a local distribution system. But any public body which owns or purchases its own distribution facilities may obtain SPA energy at once. At best, this limitation gives the companies two years to come to terms with a municipality which decides for public ownership. There is no restriction on SPA service to cooperative electric systems.

Payments for the energy interchanges are involved. SPA will pay a flat rate of 3.25 mills per kwhr for off-peak energy from the companies. It also will pay a service charge of 1.25 mills per kwhr for company facilities used to serve its customers.

The terms under which the companies will be entitled to 1.65 kw for each 1 kw of demand of SPA customers allow the companies 0.5 kw for transmission and other losses. The companies will pay for the remaining 0.15 kw of capacity at a rate of $1.15 per month. Deliveries into the company systems will total 330 kwhr per month for each kw of SPA demand.

The contract may be canceled after five years by either party on three years' notice. Rates will be reviewed every three years, beginning Feb 13, 1953. The contract becomes effective within 90 days, if approved by the Federal Power Commission within that period.

Other companies of the Southwest, which have been awaiting the outcome of the negotiations between SPA and the Oklahoma companies, have been studying the agreement. But neither they nor government sources encouraged reports that similar contracts might soon be concluded in the area.

Some company spokesmen ironically noted that Interior officials earlier this year asserted that they wanted "brief, simple" agreements with the companies. The Oklahoma contract is a 50-page document.

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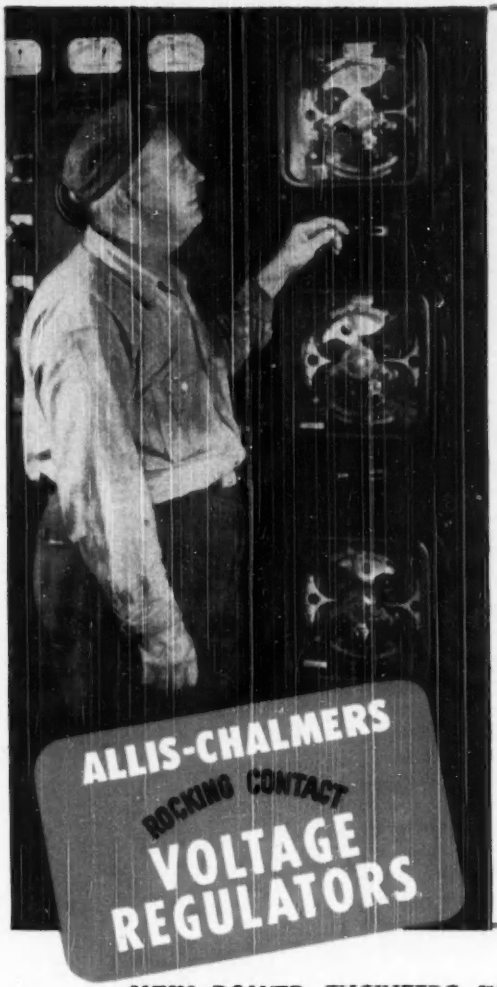
NSRB Cool to IUE's Bid for Labor-Industry Talks

A labor-management conference has been proposed for the electrical manufacturing industry by James B. Carey, administrative director of the CIO International Union of Electrical, Radio, and Machine Workers. But the bid isn't getting serious attention at the National Security Resources Board.

Carey's letter to W. Stuart Symington, NSRB chairman, caused some eyebrow raising among labor leaders because a labor committee that does not include Carey already is working with NSRB to ascertain labor's role in the mobilization program.

The union leaders have stressed that organized labor wants to participate in actual policy, planning, and administration of the mobilization effort. It does not want to fill the role of "advisor."



"Installed in 1941...Still No Maintenance"

— SAYS POWER ENGINEER ST. BERNARD, OHIO

ACCORDING TO LEO E. HEIMERT, "Their performance can't be beat. They were put in service nine years ago, and we have yet to see any sign of needed maintenance. Regulation has been tops!"

What are the reasons behind this typical performance?

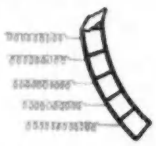
1. Allis-Chalmers Rocking Contact Generator Voltage Regulators have no vibrating contacts, no gliding friction, no complex adjustments. The few moving parts are all supported in jeweled bearings. See below how simple and friction-free this makes the unit.

2. They're genuinely precision-manufactured. Sectors rock on accurately machined commutator segments that are silver surfaced for positive contact, long life.

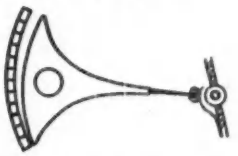
No wonder Allis-Chalmers Rocking Contact Regulators are preferred by many as the finest for their systems! If you want long years of trouble-free service, specify *Rocking Contact* Generator Voltage Regulators for your next switchgear or switchboard . . . or replace inefficient regulation now! Call your nearby A-C representative or write direct. A-2967

ALLIS-CHALMERS, 932A SO. 70 ST.
MILWAUKEE, WIS.

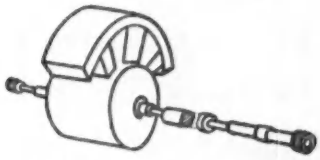
WHY POWER ENGINEERS IN UTILITIES, MUNICIPALITIES AND INDUSTRY PREFER ALLIS-CHALMERS ROCKING CONTACT REGULATORS:



Each commutator segment is connected to a wire wound resistance element that is accurately designed according to the characteristics of *your* generating equipment. Resistance elements are air cooled —commutator is in dust-tight enclosure.



Rocking Contact sector pivots on jeweled bearing . . . has smooth working, hard graphite face that rocks on curved, silver surfaced commutator . . . regulates with slight movement . . . reduces wear . . . maintains accuracy.



Quick acting torque motor drives Rocking Contact Sector . . . has jeweled bearings for rapid, accurate, anti-friction movement. Aluminum rotor reduces inertia . . . increases speed of response.

ALLIS-CHALMERS

MEMO

SAM:

This is something for us to think about.

Would it mean all our primary deadends would have to be changed if we cut over to 12 kv instead of 4 kv ?

TECHNICAL NOTES

ARCHER E. KNOWLTON

Conversion from 2.3-kv delta to 4-kv wye involves adding a neutral which is very handy when subsequent conversion to 12 kv is indicated—why not 12 kv at once?

Internal radiation from radioactive wastes that find their way into the human body constitutes the principal problem for atomic power safety. Plutonium, fortunately, is practically not absorbed.

Steam at 3,000 psia and 1,600 F would ideally surpass 1,250 psia/950 F by 15.7% in thermal performance, and this might justify an added $15 per kw outlay for the equipment—provided the metals were available.

Human organism resistances stand in the following relations to muscle as unity: nerve and cartilage 2 to 3, bone 15 to 20, and skin 50 to 100. Feminine skin is one-tenth as resistant (electrically) as masculine—not moist the latter may be 8,000 ohms per sq in.

Bushing capacitance is no longer considered to be something that makes arresters unnecessary for lightning protection of transformers.

Plastics and synthetics may not cure properly if the heating is too short or too fast. In cellulose fabrics the temperature rises sharply after the moisture has been reduced to small percentage.

May 1, 1950 • ELECTRICAL WORLD

Jack:
No! When the cut over was first considered we standardized on this deadend assembly

2 OB 6 inch suspension insulators

0-B universal clamp

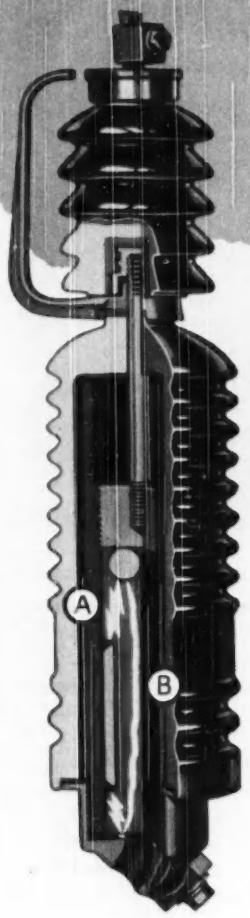
Now our deadends are ready for any voltage increase up to 12.5 KV without further rebuilding

P.S. These O-B items are available from the local Graybar house at l.c.l. prices delivered

Graybar Distributed by GraybaR
3055H
Ohio Brass
MANSFIELD - OHIO

July 24, 1950 • ELECTRICAL WORLD

L-M ANNOUNCES NEW LOW SPARKOVER LEVELS



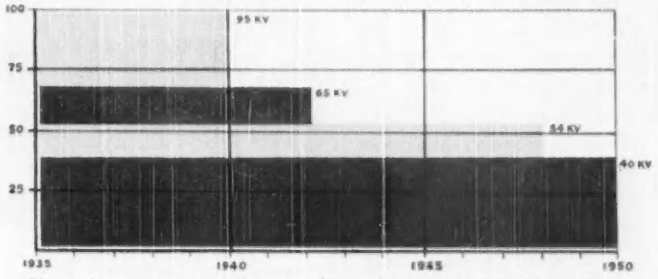


Chart shows reductions in critical impulse sparkover of 9 kv expulsion arresters. Successive improvements give L-M Expulsion Arresters the lowest impulse sparkover in history, the longest life in service.

Cross section of arcing chamber

outstanding improvements achieved by L-M Surge Laboratory research, development

● The extremely low sparkover recently achieved by L-M research answers one of the big objections to the use of Expulsion Arresters. With the new low sparkover voltages, these L-M arresters now give greatly increased protection throughout range of ratings.

Arrester life has also been substantially increased, by means of the L-M arc switching principle. Two electrodes are provided, in the narrow side of a wedge-shaped fibre arcing chamber. Jumping the short gaps at **A**, the arc forms gas that forces it into a long thin arc at **B**—and then almost instantly it is blown completely out of the chamber. The arc does not remain long enough to burn the electrodes and is extinguished so rapidly there is no appreciable erosion of the fibre.

No limit to system capacity on which this expulsion arrester may be used. Meets the NEMA-standard 65,000 amp discharge test with an ample safety margin. Available in 3, 6, 9, 12 and 15 kv sizes, with flat or cross arm mounting hangers. Wet process porcelain housing with rain-shed umbrella design. Strong clamp-type terminals. Heavy external gap electrode, eliminates accidental bending and changing of external gap spacing.

WHO DUNIT... AND WHAT!

Here's a thriller for those interested in expulsion arresters—the story of lightning arrester development and performance of the L-M PF-3 Expulsion Arrester. Ask the L-M Field Engineer for a copy of Bulletin LA3, or write Line Material, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

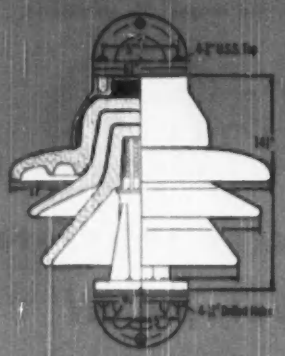
7487

LINE MATERIAL Lightning Arresters

Complete Coordinated Equipment for Distribution Today

PINCO
INSULATORS

The design characteristics shown in the Pinco L 735 have proved their superiority by "right on the job" performance in years of widely varied service on all voltages. The abilities and facilities responsible for this and other outstanding examples of Pinco pioneering leadership in insulator and special porcelain design and manufacture are at your service.



PINCO L 735
SPECIFICATIONS

Dry Flashover	160,000 volts
Wet Flashover	95,000 volts
Leakage Distance	33"
Torsion Strength in lbs.	40,000
Torsion Strength, lbs.	20,000

Installation of Pinco L 735's at the Illinois Power Company's North Decatur, Ill., 138 KV Sub-Station. Prize winning photo submitted by J. W. Hickman, Draftsman for the Illinois Power Company.

A few years back, all switch and bus units were made with a short second shell which invited the possibility of cascading in stacks. That is, up until Pinco introduced the revolutionary new L 735 switch and bus stacking unit. With rugged porcelain, a larger second shell and an improved center design, this new unit showed far superior flashover performance and greatly reduced the tendency to cascade. It also provided added leakage protection and increased mechanical strength.

Today, this idea like many others pioneered by Pinco, is an accepted industry standard . . . further evidence that Pinco is constantly primed to keep abreast of industry requirements. So whether your insulator requirements are ordinary or extraordinary—the services of the entire Pinco organization are yours to command.

See Page 118 Pinco Catalog No. 49
for complete electrical and mechanical specifications.

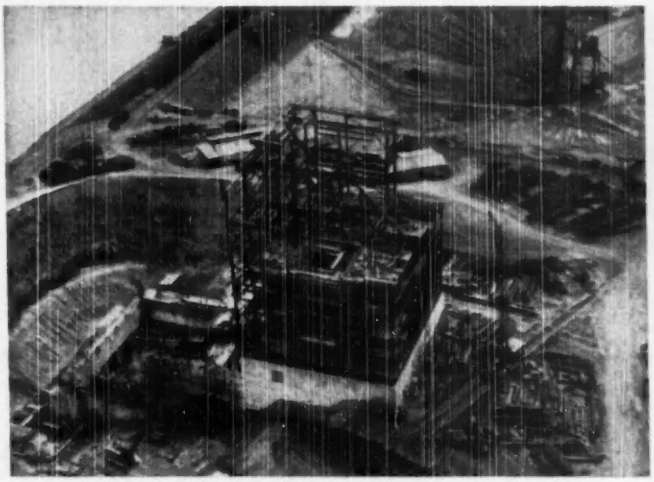
The Porcelain Insulator Corporation
766 Main Street, Lima, N. Y.

Sales Agents: JOSLYN MFG. & SUPPLY CO.
Offices in Principal Cities

PINCO INSULATORS

Suspension Insulators . . . Switch and Bus Insulators . . . Distribution Clamps . . . Distribution Pin Types and Guy Strains . . . Transmission Line Fittings . . . Tree Insulators . . . Transformer and Circuit Breaker Bushings . . . One Piece and Multi-part High Voltage Pin Types . . . Suspension and Strain Clamps . . . Indoor Bus Support Porcelain . . . Lightning Arrester Porcelain.

• 1920 Thirty Years Service to the Electrical Industry 1950 •



TWO GENERATING UNITS with a capacity of 150,000 kw each will be installed in the Tanners Creek steam plant of the Indiana & Michigan Electric Co near Lawrenceburg, Indiana, now under construction. First unit is scheduled for operation in February, 1951; the second in October, 1952. The cross-compound turbine generators will be mounted on the substructure nearest the river. The steel section is the boiler-bunker-heater bay

Social Security Bill Aids Employers' Bookkeeping

Employers can start taking stock right now of important changes which probably will be made in their payroll and tax accounting procedures when the revised Social Security Bill finally passes Congress.

Biggest change affecting employers will be the combining of social security and income tax payments into a single deduction from an employee's pay check. Under the present law, two separate records are required, but the new bill authorizes the Bureau of Internal Revenue to draw up a table for employers which will show at a glance what the Treasury's total cut should be.

Payroll departments have one headache which will be eliminated under the new law. Income above $3,000 is not taxable for social security purposes; so constant watch must be kept on workers' earnings so that no deductions are made after that figure is reached. The new scheme would allow paymasters to ignore the cut-off point of $3,000 and continue to collect social security taxes on all income. At the end of the fiscal year, workers earning more than $3,000 would have the extra social security taxes collected either returned to them by the government or credited to their income tax accounts with Washington.

The bill will probably fix this cut-off at $3,600; but whatever it is, the principle will remain the same.

Here's an example of how the scheme might work. An employee who earns $4,000 during 1951 has several hundred dollars deducted for both social security and income taxes.

Since only $3,600 of his wages would be subject to social security levies, his liability (at the new rate of 1½%) is $54. Because there is no cut-off, though, the employer would hold back $60. The extra $6 is later credited to the income tax he owes. If regular income tax deductions turn out to be enough to meet his obligations, he can get the $6 back in a refund check.

House and Senate are still pretty far apart on a few provisions in the revised bill. It's almost certain, however, that both chambers will approve the tax changes worked out by the Senate Finance Committee's bill-drafters. The new provisions would then go into effect Jan 1.

•

Electric Heating Gaining

Electric house heating is gaining in the South. The Electric Power Board of Chattanooga, Tenn., reports more than 7,500 homes are now using electricity for heating. It is receiving 250 applications a month from persons desiring to install electric heating. Nashville expects to have 13,000 electric heating customers by Dec 31, 1951. City officials report there is no delay in getting this service as generally has been the case in Chattanooga.

FPC Nears Decision On Color Television

Federal Communications Commission reportedly is nearing its long-awaited decision on color television. Washington reports indicate the Commission probably will come up with a ruling by Aug 1.

Meanwhile, the FCC is considering two recent developments—the Korean crisis and a scientific evaluation of present color systems. The war in Korea, if it forces curtailment of television production, might postpone the FCC decision indefinitely. But the report by a Senate-sponsored committee of electronics experts provides the Commission with a new array of data on which it might base an early verdict.

Rearmament may require the conversion of plants now producing TV sets to military production. There has even been some speculation that the armed forces might require television broadcast channels.

The report of the experts to the Senate, however, was drawing considerable attention at FCC.

Analyzing the three proposed color systems, the experts recommended that one—and only one—of the systems be approved. The systems were those of the Radio Corporation of America, Color Television, Inc, and Columbia Broadcasting System. The CBS system was said to give "highly satisfactory" color fidelity, but unlikely to be improved greatly. The RCA system "can be expected to improve substantially," and that of CTI is "less fully developed" but has "somewhat greater possibility of future improvement."

A breakdown of performance characteristics revealed advantages for each of the systems.

The experts, commissioned to make the study by the Senate Interstate and Foreign Commerce Committee, included Dr Edward U. Condon, director of the National Bureau of Standards, chairman; Donald G. Fink, editor of *Electronics*, a McGraw-Hill publication; Stuart L. Bailey, president, Institute of Radio Engineers; William L. Everitt, University of Illinois; and Newbern Smith, Bureau of Standards.

•

French Output Rises 50%

Electric output in France has increased 50% since the end of the war, according to B. E. L. Timons, Acting Chief of the ECA Mission to France. With Marshall Plan assistance, France's total annual output has risen from 20 billion kwhr in 1945 to 30 billion kwhr.

HELPING BUILD MISSISSIPPI
REFLECTING THE STEADY GROWTH OF AMERICA'S No. 1 STATE OF OPPORTUNITY
APRIL, 1950
Guest Editorial:
Why I am Proud To Be A Mississippian
BY MARY D. CAIN
State Livestock Shows Spotlight Major Industry

MONTHLY NEWSPAPER, published by Mississippi Power & Light's advertising and publicity department, is circulated among Helping Build Mississippi Club members to keep them up to date on progress the state is making. Part of a sample front page is reproduced above

Mississippi Power & Light Co Boosts Its State

Sponsors a 'Helping Build Mississippi Club' for Promotion of the Area, Enlists More than 4,000 Members to Work for Its Progress and Prosperity

SOMETHING NEW in public service has been added by Mississippi Power & Light Co.

The addition is the Helping Build Mississippi Club, an aggressive area promotion organization boosting the economic, social, agricultural, and industrial progress of the state. It was launched last September by the utility. Other Mississippians—more than 4,000 of them, at latest count—took up the idea, signing the unique membership pledge to work for Mississippi's "progress and prosperity."

There's no other qualification for membership—no dues, no meetings to attend. The club has no officers. But Gov. Fielding L. Wright was signed up as Number One Member by MP&L Pres. Rex I. Brown shortly after the club was organized.

Objectives of the organization are long range. Brown, members of the utility's publicity and advertising staffs, and MP&L's advertising counsel decided that Mississippi needed an organization of boosters. Best people for the job, they decided, would be Mississippians, who needed only information on the state's progress in various fields.

This information is supplied by a club newspaper, published and distributed monthly by MP&L's advertising and publicity section. The two-man staff, Editor Thomas Ethridge and Reporter-Photographer Boyd Ridgway, put out a breezy, attractive paper despite having to do so in addition to carrying their other company duties.

MP&L employees compete in recruiting new club members. Records of district and division membership recruiting are kept by the company and announced in reports every month.

In addition to the ever-growing membership, response to the club has taken other important forms. Hundreds of letters of congratulations have been received by the company. Newspapers throughout the state have picked up stories from the club paper or printed

Helping Build Mississippi Club

THIS IS TO CERTIFY THAT

MEMBERSHIP PLEDGE

MEMBERSHIP CERTIFICATE in Helping Build Mississippi Club lists objectives of group

EDITORIAL BOARD of Helping Build Mississippi Club is pictured above. Members are (left to right) George Godwin, Dixie Advertisers; Louis Cashman, *Vicksburg Post Herald*; Boyd Ridgway, Mississippi Power & Light Co; Thomas Ethridge, MP&L; George Sugg, Dixie Advertisers; Thomas Hederman, *Jackson Clarion Ledger*; Albert Fletcher, *Sardis Reporter*; Les Taylor, vice president, MP&L; Sid Harris, *Houston Times-Post*, president, Mississippi Press Assn.; Austin Seay, *Winona Times*; Albert Hand, Advertisers; Rex Brown, MP&L

editorials praising the organization.

The pay-off for the company is two-fold. It gains the good will of its fellow citizens for promoting the state. And, as one company representative puts it, any progress achieved through the club benefits MP&L as well as all other good citizens. The company is so pleased with results to date that it has made the club and its activities a permanent feature of its public relations program.

The club fits in well with other area development activities of the company. MP&L has joined with other industrial organizations in the state to attract new enterprise. It also has an agricultural promotion program. In addition, the company gives sales training to gas and electric appliance dealers, as well as to its own merchandising staff.

REX I. BROWN, president of Mississippi Power & Light Co, directs the work of the Helping Build Mississippi Club, which is being sponsored by his company

•

Texas High Court to Hear Utility Franchise Dispute

The Texas Supreme Court has agreed to review a case testing the state's 1949 law on the cancellation of utility franchises.

The case involves the city of Mason and West Texas Utilities Co. The company was granted a 50-year franchise from Mason County officials in 1925. The town of Mason was incorporated in 1945 and three years later set up a municipal electric system. In 1949 the city ordered the utility to get out.

The state legislature then passed a law which allows utilities ten years to make a contract with officials of a new town, or be ejected.

The Court of Civil Appeals held that no suit for removal can be brought for ten years, and voided Mason's ordnance ejecting the utility. Mason officials contend that the act applies only to cities incorporated after 1949.

•

Utility Buys Country Club

The Union Electric Co of Missouri has purchased a 52-acre country club adjoining the site on which it will build a power plant in southern St. Louis County. The site is at the confluence of the Mississippi and Meramec Rivers.

Dam Site Investigated by Army's Engineers

The Army's Engineers have started to investigate the site of the proposed Albeni Falls Dam on the Pend Oreille River, two miles east of the Idaho-Washington state line. The proposed dam will serve the multiple purposes of power, flood control, navigation, recreation, and fish and wildlife conservation.

The hydroelectric installation will include three generators with a total rating of 42,600 kw. The first two will go on the line in 1954 and the third early in 1955. No construction funds have been appropriated, but work is tentatively planned to begin in the 1951 fiscal year. Estimated cost of the project is $31,070,000.

•

Co-op-Private Company Plant Now in Operation

A partnership between a private electric company and a super-cooperative has reached the operation stage. The first 20,000-kw unit at a plant near Cedar Rapids, Iowa, owned by the co-op but operated by the utility, has gone on the line. Another unit of the same size is nearing completion.

The $7-million plant was built with funds loaned by the Rural Electrification Administration to the Central Iowa Power Cooperative. Eight distribution co-ops make up Central Iowa. The plant is integrated in the system of Iowa Electric Light & Power Co.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE 1950									
July 13	2.65	2.67	2.76	3.82	4.05	4.43	5.71	6.93	8.05
July 6	2.65	2.67	2.76	3.81	4.02	4.38	5.31	6.47	7.52
END OF QTR.									
2nd 1950	2.63	2.66	2.74	3.79	4.03	4.38	5.38	6.51	7.50
1st 1950	2.59	2.61	2.74	3.78	4.01	4.36	5.22	5.85	6.67
4th 1949	2.59	2.61	2.72	3.85	4.06	4.46	5.37	6.15	7.01
3rd 1949	2.61	2.65	2.77	3.88	4.15	4.54	5.55	4.67	7.51

Data: Reis & Chandler, Inc.

City Purchase of Puget Sound P&L to Go Before Seattle Voters Nov 7

DECISION on the proposed purchase of Puget Sound Power & Light Co distribution properties in the Seattle, Wash., area by the City of Seattle will be made by the voters Nov 7. Properties outside of the Seattle competitive area eventually are expected to end up in PUD hands.

The City Council has unanimously approved a plan to buy the properties for $25,850,000. Council President Robert H. Harlin explained to his associates that the purchase price is actually less than the value at which the city's engineers had appraised the properties on a basis of reproduction cost new less accrued depreciation.

"Our engineers' estimate was based upon valuation of Dec 31, 1947, which totaled $23,767,324," Harlin pointed out. "Since then the company has made additions and improvements that raised the total, as of March 31, 1940, to $26,692,234. Cost of integrating the two systems will be more than offset by the $3 million net operating revenue City Light will realize annually from the properties."

No real opposition to the proposed purchase has developed or is even in sight.

Pres Frank McLaughlin of Puget Power, commenting on the purchase price, declared that "the company had no choice."

Excluded from the purchase plan are the company's steam heating plant and headquarters in Seattle and all generating facilities except the Georgetown steam plant in Seattle. The company has indicated its desire to sell separately the steam heating plant and system, serving much of downtown Seattle. The generating plants are expected to go to a group of PUD's, together with most of the rest of the company's distribution system in western Washington State.

Until the city actually takes over the properties, not later than March 1, 1951, the company can make no additions to plant without the city's consent. For such additions, when agreed to, the company will be reimbursed by City Light funds to be appropriated by council ordinance. Purchase from the company of such operating materials and supplies as the city may desire to buy also will be financed by appropriation ordinances.

The city has accepted the company's offer to furnish 83,500 kw of power for one year, with an option for an additional year, at $17.50 per kilowatt year, following take-over of the properties, until City Light's enlarged Skagit project can carry the combined load of the two systems.

Integration of the two systems would start immediately after the take-over but may take as long as six years to complete, said E. R. Hoffman, City Light superintendent. Only physical changes necessary immediately to serve the company's 78,000 customers in the area involved would be "severance of certain lines and the making of a few re-connections at the boundaries," at a cost of about $100,000, McLaughlin said.

Meanwhile, a plan for a number of smaller cities in King and Pierce counties to purchase Puget Power distribution systems within their districts collapsed when the company announced it would not consider such sales.

This appears to clear the way, at least in King County, for formation of a PUD to take over the system outside the Seattle area. Formation of a King County PUD is expected to be on the ballot in November.

"Puget has always opposed the piecemeal dismemberment of its system and definitely feels that in any transition to public power it is in the public interest to preserve to the maximum extent the economic and other advantages of its interconnected system," McLaughlin said.

"Obviously, one large light and power system covering all of King County outside of the Seattle competitive area can more adequately, reliably and economically serve the territory than a hodgepodge of small isolated operations irrespective of the nature of the ownership of the properties."

FINANCIAL BRIEFS

Pacific Power & Light Co's proposed 3½-for-1 split of its common stock has been approved by the Federal Power Commission. Purpose is to facilitate the disposal of the common stock, recently purchased by a 16-member syndicate. The Public Utilities Commissioner of Oregon and the Washington Public Service Commission gave their approval to the split earlier.

The Michigan Public Service Commission has approved the proposed merger of Michigan Public Service Co into Consumers Power Co and a rate reduction of about 25% in the area to be taken over.

A $1,250,000-a-year rate cut by Consolidated Gas, Electric Light & Power Co of Baltimore is going into effect with the July meter readings. Bulk of the reduction, $925,000, will go to smaller commercial users. Residential customers will save $150,000, large commercial $55,000, high tension $85,000, and street lighting $35,000.

Electric Utility Financing—July 8-15

Company	Description	Amount of Offering (000)	Offering Price	Yield at Price to Public
Bonds				
Kentucky Utilities	1st mtg. C 2 7/8% 1980 new money	$3,500	101.108%	2.82%
Common				
Middle West Corp	divestment of shares of common of certain electric utility subsidiaries	400		

L-M Announces

a revolutionary new development in transformer oil

"ORTO"* brand oil is a revolutionary new inhibited oil that resists oxidation, acidification, and sludging. It lasts several times as long as a high-grade conventional oil. Therefore it offers these advantages:

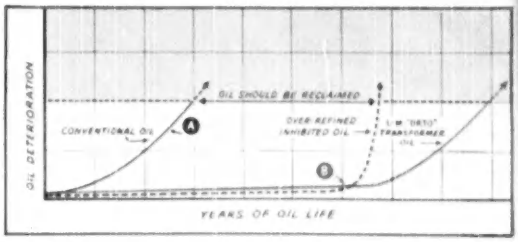
1. **Improved overload capacity**
2. **Longer transformer life**
3. **Lower maintenance costs**

"ORTO" brand oil has been thoroughly tested. Its advantages are conservatively stated. It does not deteriorate suddenly after the inhibitor has been used up. In "ORTO" the inhibitor lasts many years. After that the oil still has inherently long life, with normal resistance and characteristics; and it then simply begins the normal rate of deterioration.

All this time "ORTO" has kept cooling oil passages clear of sludge, permitting the original unrestricted oil circulation, and maintaining the original high short-time overload capacity. By preventing the formation of acids, "ORTO" has protected cellulose insulation from deterioration, and has prevented the corrosion and rust caused by acidified oil.

"ORTO" brand oil is now available exclusively in L-M Round-Wound and other L-M distribution transformers.

Ask the L-M Field Engineer for complete information, or wire or write Transformer Sales Department, Line Material Company, Zanesville, Ohio (a McGraw Electric Company Division).



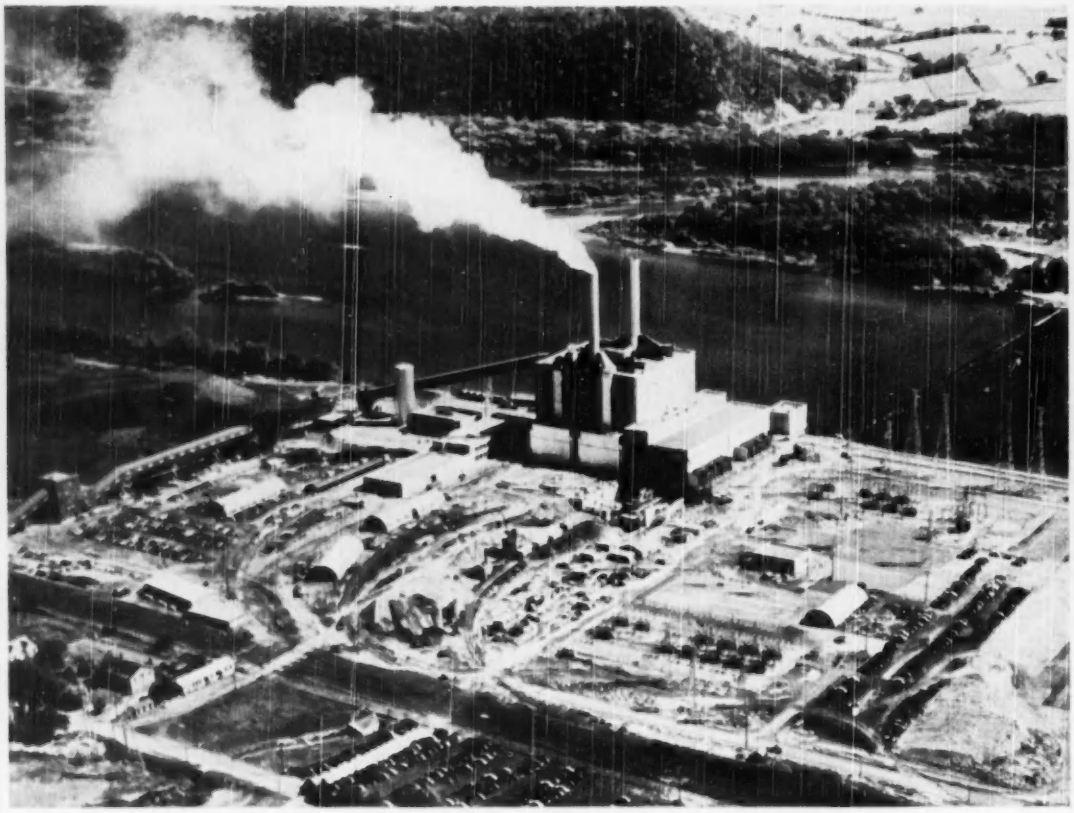
Comparative curves show the deterioration of transformer oil in service. A high-grade conventional oil deteriorates at a gradually accelerating rate. Over-refined oils may have a better response to the inhibitor; but once the inhibitor has been used up, the oil has little resistance to oxidation, and deteriorates rapidly. "ORTO" brand oil is a high-grade conventional oil with an inhibitor which greatly extends the beginning of the deterioration, which, when it finally starts, assumes the same gradual curve as with any high-grade conventional oil.

*Trademark

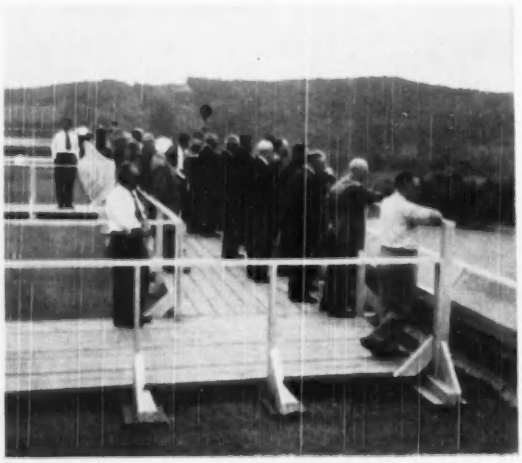
10-1

LINE MATERIAL ... Transformers

Complete Coordinated Equipment for Distribution Today

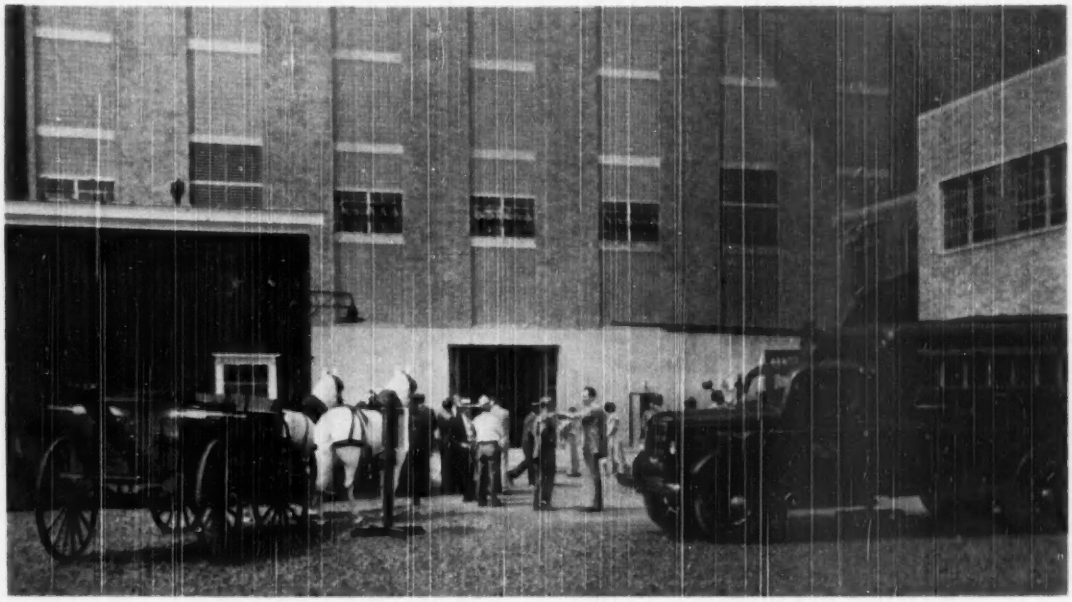


SUNBURY PLANT, the largest anthracite-burning electric generating station in the world, was dedicated on June 21. This is the largest of the plants owned by the Pennsylvania Power & Light Co and is located 3 miles below Sunbury on the west bank of the Susquehanna River at Shamokin Dam



FROM TOP SIDE a visiting group views the 259-acre site, construction work on the new 100,000-kw unit, and present coal pile of 700,000 tons

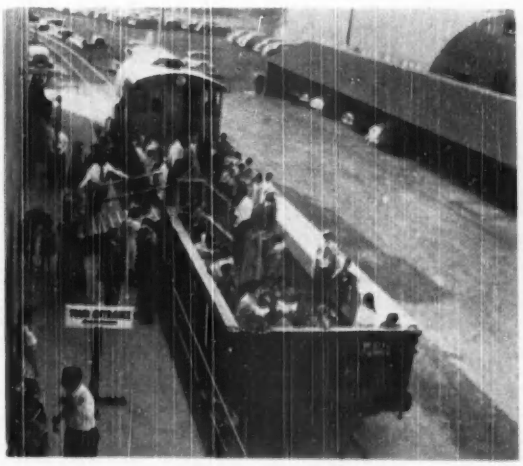
COAL USE by the company is emphasized by the guide in lecture in the bunker room of the plant. Company now uses over 2 million tons a year



HORSE-DRAWN line truck in use at the turn of the century stands in front of replica of world's first 3 wire lighting plant (left). In contrast are the modern line truck (right) and new plant in background with its initial capacity of 150,000 kw and 100,000 kw more under construction

Looking Over the Sunbury Plant

IRRESISTIBLE is the temptation to the visitors to take a peek through the peep holes into boiler where pulverized coal burns at white heat



CHILDREN of employees had own preview. Special treat was ride around the 9 miles of plant track in a gondola drawn by a fireless locomotive

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

For emergency only...

Pull!

When the breaker trips after repeated red light warnings, and you must get back in service without delay . . . *pull the Emergency Control!*

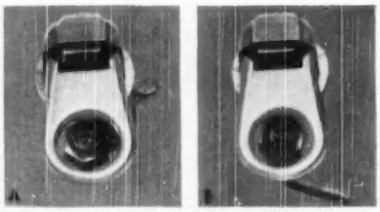
Save costly overtime.

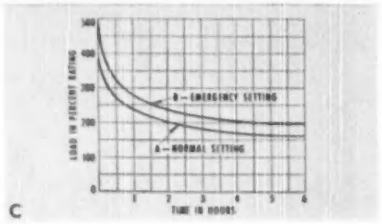
Avoid change-outs under adverse conditions.

Emergency Control adjusts the "CSP"® breaker to allow greater overload before tripping. It permits regular crews to schedule change-outs at convenience.

Even with Emergency Control in operation, "CSP" Transformers have full lightning and short-circuit protection.

Now standard equipment on all Westinghouse "CSP" Transformers with signal lights, 5 through 100 kva, Emergency Control gives greater assurance of service continuity . . . lets you be sure of maintaining service. Contact your Westinghouse representative or write for Booklet B-4249. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-70551-A





A: Emergency Control handle, secured in normal operating position with a standard meter seal.

B: Emergency Control handle in emergency position. This sets breaker for greater overloads.

C: Typical breaker trip curves, illustrating increased overloads sustained with Emergency Control.

Westinghouse "CSP" TRANSFORMERS

ASA Issues 2 Proposed Lamp Ballast Standards

Two proposed American Standards on lamp ballasts have been published for a year's trial and criticism. For the first time, according to the American Standards Association, ballast manufacturers will have bed-rock specifications upon which to build lamp ballasts. They need no longer be defined in terms of lamp performance. They can now be checked against the new "reference" ballast.

The proposed American Standard Specification for Reference Ballast provides manufacturers with the performance characteristics of ballasts used for testing purposes in terms of, and in relation to, a reference current. The 60-cycle impedance of these reference ballasts is a determining factor in establishing the performance characteristics of the lamps to be used with them. A reference ballast of a definite 60-cycle impedance is readily produced in any laboratory. This, therefore, becomes the real datum point to which both lamp and ballast performance can be referred.

In order for various groups to measure fluorescent lamp ballasts accurately, the proposed American Standard Method of Measurement of Fluorescent Lamp Ballasts has been developed. The particular operating characteristics of fluorescent lamps, high voltage and relatively small currents, voltages having almost square waveform, the effects of temperature and air movement, and other conditions peculiar to the fluorescent lamp—make it necessary to choose instruments carefully and to follow definite procedures if different groups are to obtain similar results in measurements. This standard outlines the procedure for tests of ballasts used with both hot-cathode and cold-cathode fluorescent lamps. It codifies the experience gained in over 12 years of such measurements.

Copies of both proposed standards may be purchased from the American Standards Association, 70 East 45th St, New York 17, N. Y.

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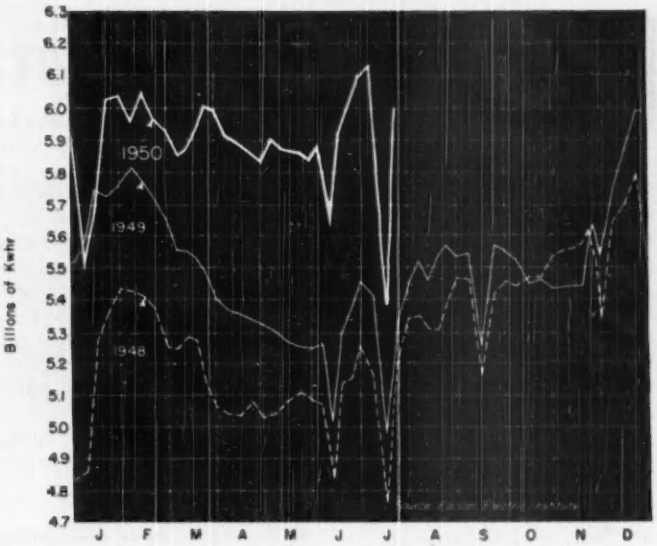
Union Electric Boosts Pay

Union Electric Co has granted 1,250 of its workers in Missouri, Illinois, and Iowa a 10¢ hourly wage increase, retroactive to July 1. The workers, members of AFL Operating Engineers' Local 148, will receive a raise of 5¢ an hour on July 1, 1951, under terms of the new two-year contract. The agreement also provides for pensions for employees. Other details of the contract are being worked out.



Output Week Ended July 15—6,006,345,000 Kwhr

Weekly Output, Millions Kwhr			Percent Change from Previous Year		
July 15 6,006	July 16 5,342	July 17 5,197	New England	+14.7	+ 5.1	+17.2
July 8 5,380	July 9 4,982	July 10 4,760	Mid-Atlantic	+11.1	+ 8.8	+12.9
July 1 6,115	July 2 5,410	July 3 5,166	Central Industrial	+16.4	+ 7.6	+15.5
June 24 6,102	June 25 5,466	June 26 5,257	West Central	+10.3	+ 1.4	+ 9.1
June 17 6,012	June 18 5,373	June 19 5,159	Southeast	+13.9	+ 9.8	+17.0
June 10 5,921	June 11 5,300	June 12 5,132	South Central	+ 8.9	+10.7	+15.1
June 3 5,632	June 4 5,018	June 5 4,845	Rocky Mountain	+11.3	+ 6.6	+ 9.6
May 27 5,894	May 28 5,270	May 29 5,076	Pacific Coast	+ 9.0	+ 8.2	+ 5.6
May 20 5,845	May 21 5,255	May 22 5,085				
May 13 5,864	May 14 5,257	May 15 5,109	Total United States	+12.4	+ 8.0	+13.0

Alaska's Power Demands Will Rise Sharply by 1960

The territory of Alaska will require 864 million kwhr of electric energy in 1960, as compared to 126 million kwhr used in 1947, the Federal Power Commission has estimated in a survey made at the request of the Army's Engineers.

To meet this estimated demand generating capacity of Alaska's non-military electric power plants would have to be increased from 1947's 71,000 kw to 173,000 kw.

Thirteen utility systems produced 83 million kwhr in 1947 of which 78% was in the four principal load centers—Anchorage 32%, Ketchikan 21%, Juneau 14%, and Fairbanks 11%. Nine other utilities used 22% of the power produced.

In 1960, FPC estimates Anchorage will require 222 million kwhr; Fairbanks, 147 million kwhr; Ketchikan, 133 million kwhr; Juneau, 128.5 million kwhr; Wrangell, 116 million kwhr; and Sitka, 73 million kwhr.

Ketchikan has the lowest residential electricity rates in Alaska while Juneau's commercial rates are lowest.

MEETINGS

Instrument Society of America
National Conference and Exhibit, Buffalo Auditorium, Buffalo, N. Y., September 11-15.

Northwest Public Power Association
Convention, Portland Hotel, Portland, Ore., September 13-15.

American Society of Mechanical Engineers
Fall meeting, Hotel Sheraton, Worcester, Mass., September 19-21.

Public Utilities Association of the Virginias
Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., September 22-23.

Canadian Electrical Manufacturers Association
Annual Meeting, General Brock Hotel, Niagara Falls, Ontario, Can., September 27-29.

National Television and Electrical Living Show
Chicago Coliseum, Chicago, Ill., September 29-October 8.

Pennsylvania Electric Association
Transmission and Distribution Committee, Iram Temple Country Club, Dallas, Pa., October 5-6.

Indiana Electric Association
Annual Convention, French Lick Springs Hotel, French Lick, Ind., October 11-13.

International Association of Electrical Leagues
Annual Conference, Copley Plaza Hotel, Boston, Mass., October 11-14.

National Electrical Contractors Association
Annual Convention, Hotel Biltmore, Los Angeles, Calif., October 17-20.

American Institute of Electrical Engineers
Middle Eastern District Meeting, Lord Baltimore Hotel, Baltimore, Md., October 3-5; Fall General Meeting, Skirvin Hotel, Oklahoma City, Okla., October 23-27.

IN THE INDUSTRY

WILLIAM B. WHICHARD

WAR IN KOREA, whether or not it mushrooms into something far worse, now is a major factor in the future of American industry, including the utilities. Sooner or later—and it had better be sooner—the utilities must review their planning so that power still will not be "too little or too late."

The industry, like the rest of the economy, already has had some jolts arising from the Korean crisis. The reaction of the stock market (see page 4) had a double-barreled impact. The fall in prices of utility securities, sharper percentage-wise than that of industrials, toughened and restricted the market for issues necessary to finance new capacity and other plant. And the jump in yields made financing more costly, as well as more uncertain.

Material allocations, just starting, are likely to get stiffer before they are eased. And additional taxes, though a year away, must figure now in plans for the future.

How long these and restrictions yet to come will continue depends on a number of imponderables. But it is likely that some will be with us for years, rather than months. Washington apparently has decided for preparedness-short-of-war. Just how short is not yet clear. But more than just enough to finish the job in Korea, at any rate.

On what basis then, should the utilities go over their future plans? Certainly, the first step is to review schedules of capacity additions to make sure all generating equipment likely to be needed in this short-of-war crisis is ordered now or soon. And to take every feasible action to assure establishment of an allocation system which gives proper weight to requirements for new capacity.

There is also the responsibility, already undertaken by some companies, to review all construction plans and inventory schedules. First projects should be listed first. The unessential jobs should be rated low, or abandoned entirely.

Such a review should take cognizance of national, as well as local, requirements. The industry should anticipate some needs for interconnections or service extensions without awaiting the creation of another Office of War Utilities to order them. If it takes an OWU to obtain the necessary equipment, the systems which have done the best planning along these lines undoubtedly will get equipment first.

Government also must take a more charitable view of the problems of the privately-financed segment of the industry. Especially of the industry's efforts to raise the money for expansion.

The money marts are subject to unexpected fluctuations. But it took the industry a year and a half to flatten the end-of-1948 peak of utility yields to the favorable levels of recent months. It cannot be reasonably expected that the market will be so inviting for utility financing in the near future.

On the other hand, the industry has scheduled capacity additions totaling more than 15 million kw for 1950-52. There's little doubt that every bit of this new capacity will be needed if the economy goes into high gear for the rearmament program. But, it obviously will not be as easy to finance this expansion as it has been for the industry to raise funds in the past year.

Present market conditions indicate probable need for further debt financing. Here, too, the industry must act with caution, screening every call for this type of funding. Regulatory bodies already have been jumpy over the ratio of debt to total capitalization, which stood at approximately 49% at the end of 1949. Regulators must temper their thinking on this point to conform with emergency needs. But the needs must be completely realistic.

TECHNICAL NOTES

ARCHER E. KNOWLTON

(From papers presented at the recent Conference Internationale des Grand Reseaux Electriques a Haute Tension)

Direct regulation of frequency was proposed in a Yugoslav paper which based the control on the integrated departure from Standard time. (334)

Magnetic attraction on the 380-kv double conductors at 45 cm spacing reduces the separation at midspan as load increases to 790 Mva and the point of instability is reached at 19 cm separation. (410)

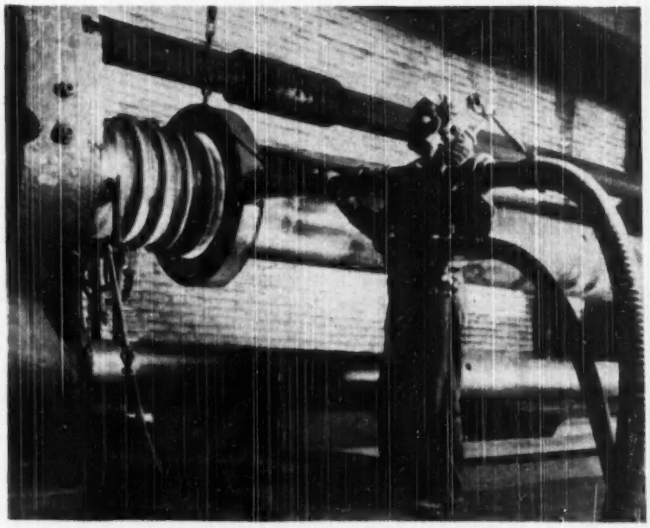
Conductor damping on the Swedish 380-kv line will be accomplished by rubber inserts which incur hysteresis losses when the 3 suspended weights bounce out of time with the vibrating conductor. (410)

Tempered glass insulators (new to Sweden) will be used on the 380 kv; dampers will be applied either side of the conductor or clamps. (410)

Transformers on the 380-kv line in Sweden will have 5 core limbs, 3 for the 3 generator connections accompanied by secondaries connected to the transformers. (410)

Bus differential relaying protection can be avoided by adoption of a ring bus for situations involving comparatively few circuits; otherwise the sectionalization introduces complexities in obtaining selective tripping for all operating arrangements. (318)

MANUFACTURERS and MARKETS



UNIQUE CORRUGATING MACHINE is used to form the first 30-in. OD, chrome-moly, corrugated piping in metal-fabricating shops of The M. W. Kellogg Co. Eight pieces of this relatively large diameter pipe, totaling some 90 ft overall, were shaped for major part of the exhaust-steam line from a topping turbine of Consolidated Edison Co's Hudson Avenue Station in Brooklyn. Corrugations were made through carefully controlled incremental heating and subsequent compression on especially devised machine. Major problem was to prevent cracking. Final product has five times flexibility of plain piping

Westinghouse, IUE-CIO Reach Partial Agreement

A 90-day partial agreement has been reached between Westinghouse Electric Corp and the International Union of Electrical Radio and Machine Workers, CIO.

Still to be settled, according to a joint statement by James B. Carey, chairman of IUE's administrative committee and Tom Turner, vice-president of Westinghouse, is a new pension and social insurance plan. Both the company and the union have made proposals on the subject. Discussions will continue during the 90-day period.

Covered in the partial agreement were such matters as grievance procedures, hours of work, overtime payment, check-off, holidays and vacations, and contractual items.

IUE-CIO represents 42,000 Westinghouse employees in 21 bargaining units at 18 plants as a result of National Labor Relations Board elections Apr 27.

Meanwhile, the way has been cleared for collective bargaining in 123 bargaining units of General Electric Co after withdrawal of election protests by IUE-CIO and the CIO-expelled United Electrical Workers.

One of the first developments was the company's decision to put into effect a 3% wage increase in all plants where there was no union objection. Both unions accepted it as a "down payment."

Both unions had filed exceptions to the elections conducted May 21 by NLRB. The UE contended that Sec of Labor Maurice J. Tobin had influenced workers at Lynn, Mass., and other plants to vote for the CIO. In turn, the CIO union charged company pressure.

•

CIO Local Chartered

The first local in Washington of the International Union of Electrical, Radio & Machine Workers, CIO, has been chartered in Seattle for some 50 employees of General Electric Co. A petition has been filed with the National Labor Relations Board for a representation election.

•

Alcoa Schedules Survey of B. C. Hydro Resources

Preliminary surveys will be made this summer for a proposed Aluminum Co of America hydroelectric-aluminum development which would use British Columbia's water resources to power an aluminum plant in Alaska.

The project, which has been under discussion for more than a year, would cost hundreds of millions of dollars. Involved are the far northwestern tip of British Columbia, a section of the Yukon, and Alaska.

Under the plan filed with the B. C. provincial government 1,080,000 hp would be developed by turning the waters of the region's lake system away from their natural outlets and dropping them more than 2,000 ft by a system of tunnels to the coast near Skagway, Alaska.

Atlin Lake and Tagish Lake, in northwestern British Columbia, would provide the principal supplies of water, with Bennett and Lindeman Lakes in the Yukon as additional sources. A dam would be built across the Lewes River south of Whitehorse, a few miles from the Alaska Highway.

Through a 10-mi tunnel the water would be dropped through Chilcoot Pass, then into penstocks to the first power unit, estimated at about 540,000 hp. A second power house at the end of another 11-mi tunnel would develop about the same amount of power.

•

Honeywell Enters Field of Central Power Stations

Minneapolis-Honeywell Regulator Co is expanding its production and promotion activities into the field of central power station instrumentation. More than a dozen new products have been designed for central power station applications.

The line, to be handled by the Brown Instruments Division, includes instruments and accessories for steam plants and electric distribution. Among the

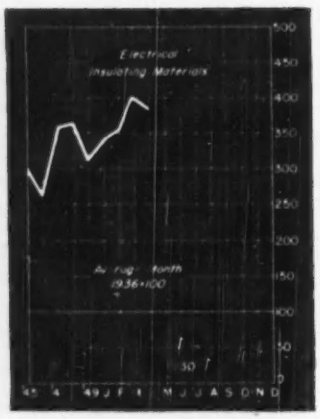
steam plant installations will be multi-point thermocouple pyrometers, resistance thermometers, high and low resistance bulbs, single-point Kelvin bridge recorders, single and multi-point conductivity recorders, pressure and liquid level recorders, pneumatic transmitters for various variables, and electric transmitters. Distribution instruments will include megowatt and varmeters and frequency and telemeter recorders.

•

Insulating Materials Sales Index Declines in April

Sales of electrical insulating materials declined in April for the first time this year.

The index of sales billed, compiled by the National Electrical Manufacturers Association, stood at 381 in April, compared to 406 in March. April sales, however, were 21% above the same month of 1949, when the index read 315.



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Price of Tin Hits Peak

The price of tin skyrocketed in the week ended July 17 to 97¢ a pound, a new high since free trading was resumed last September. The increase was attributed to fears of disruption in supplies and government regulation of use if the Far Eastern war spreads.

Metal Prices
July 17, 1950

COPPER, Conn. Y., lb	$ 22½
LEAD, N. Y., lb	.12
ZINC, prime Western, E. St. Louis, lb	.15
TIN, Straits qual, N. Y., lb	.97
ALUMINUM, base price	.17½
NICKEL, base price	.48
STEEL billets, Pitts., ton	53.00
STEEL scrap, No. 1 heavy, Pitts., ton	40.00

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Arizona-Nevada—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnish, del. f.o.b. cars shipping point or f.o.b. cars Campo Siding, Phoenix, Ariz., outdoor power circuit breakers, disconnecting switches, outdoor lightning arrester, outdoor type potential transformers, etc. for Phoenix Sub-station, Davis Dam Proj., Spec. 3123.

Arizona-Nevada—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Phoenix, Ariz., transmitter-receiver set for Phoenix sub-station and Mesa sub-station, Davis Dam Proj., Spec. 3116. L. N. McClellan, ch. engr.

California—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., one lot equipment each for Shasta Power Plant for radio communication circuit to Bass Mountain radio relay station on Bass Mountain; radio relay station on Grapevine Pass; for Sacramento; radio relay station on Mt. Oso; equipment for Tracy, for Friant Dam; for Fresno; radio relay station on Bear Mountain; for Orange Cove for Lindsay; and 30 transmitter-receiver assemblies, 5 lots of alarm receiving equipment, for Central Valley Proj., Spec. 3117. L. N. McClellan, ch. engr.

Florida—Clay Electric Co-operative, Keystone Heights, 422 mi. rural distr. lines, addni generating facilities, sys. imprvs., Clay Co. **$1,260,000.**

Idaho, Arco—U. S. Atomic Energy Comn., Idaho Operations Office, Idaho Falls, heavy electrical equip. for reactor testing station, Twin Buttes Area; 11 transformers and spare parts. Gibbs & Hill, 501 W. 6 St., Los Angeles, Calif., engrs.

Indiana—Noble County Rural Electric Membership Corp., Albion, sys. imprvs., completing previously approved construction, Noble Co. **$260,000.**

Iowa—Southeast Iowa Electric Co-operative, Mt. Pleasant, 50 mi. 69-kv rural distr. line and erecting metering and switching station. Approx. $200,000. Stanley Eng. Co., Hershey Bldg., Muscatine, engr.

Kansas—Victory Electric Co-operative Assn., Roy Marler, mgr., Dodge City, approx. 160 mi. single-phase and 21 mi. conversion, incl. single-phase about 112 taps or exten. in Ford, Gray, Hodgeman and Kiowa Counties. **$250,000.** Frank Horton & Co., Lamar, Mo., consult engrs.

La., Baton Rouge—Ethyl Corp., c/o contractor, electrical and communication sys., to Southeastern Electric Co., Andalusia, Ala. Approx. **$140,000.**

Massachusetts — Commonwealth of Mass., Dpt. Health, 15 Ashburton Rd., Boston, Power Plant imprvs. Contr. 1 turbines, Contr. 2 boiler etc., Batchertown. Plans deposit $25, refundable, McClintock & Craig, Inc., 458 Bridge St., Springfield, engrs.

Missouri—Co-Mo Electric Co-operative, Tipston, 287 mi. rural distr. lines, etc., Cooper Co. **$565,000.**

Montana—Glacier County Electric Co-operative, Cut Bank, 100.5 mi. rural distr. lines, 30.5 mi. transmission line, headquarters facilities, etc., Glacier Co. **$825,000.**

Nebraska—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Trenton high-pressure gates with four 173,000 lb. hydraulic hoists; two 15,000 lb. semi-automatic gate hangers, 2 hydraulic gate hangers with parts for mechanical indicators and with 2 single-throw mercury switches and two 1¾ in. standard shoulder eyebolts for spillway river outlets, Trenton Dam, Frenchman-Cambridge Div., Missouri River Basin Proj., Spec. 3121.

Nebraska — Cornhusker Rural Public Power Dist., Columbus, 393 mi. rural distr. lines, 15 mi. transmission line and sys. imprvs. Cornhusker Co. **$954,000.**

N. Y., Sapanoch—Bureau Contracts & Accounts, Albany power plant at Institute for Male Defective Delinquents. Plans deposit $30.

N. Y., New York—Bd. Transportation, 250 Hudson St., Zone 13, furnishing, installing 60,000 kw. turbine generator for 74 Street power plant, New York City Transit Sys.

North Carolina — City of Greenville, Greenville, 424 mi. rural distr. line and sys. imprvs., Greenville Co. **$910,000.**

Ohio—Ohio-Midland Light & Power Co., Canal—Winchester, 39 mi. rural distr. lines 28 mi. 69 kv transmission line, 4 sub-stations, garage and warehouse facilities and sys. imprvs., Franklin Co. **$750,000.**

Oregon—Lane County Electric Co-operative, Eugene, 57 mi. rural distr. lines, headquarters facilities and sys. imprvs., Eugene Co. **$805,000.**

South Dakota—Rosebud Electric Assn., Winner, rural distr. lines, sys. imprvs. facilities, Tripp Co. **$1,630,000.** United Eng. Service Kascta Bldg., Minneapolis, Minn., engrs.

Tennessee—City of La Follette, La Follette, 166 mi. rural distr. lines and sys. imprvs., La Follette Co. **$578,000.**

Texas—Sam Houston Electric Co-operative, Livingston, 294 mi. rural distr. lines and sys. imprvs., Polk Co. **$790,000.**

Wash., Seattle—City, County & City Bldg., Zone 4, a-c sub-stations at Fremont and Ballard, each **$75,000**; d-c sub-stations at Fremont, Ballard and in north district, **$121,000**; combined ad-d-c station in West Seattle, **$275,000.** E. R. Hoffman, city light supt.

Wash., Seattle—City, County—City Bldg., Zone 4, control bldg., switchyards, etc. for City Light Sub-station. $400,000. E. R. Hoffman, Seattle, city light supt.

Wis., Milwaukee—Western Electric Co., Inc., 1461 W. Clybourn St., Zone 3, factory. Approx. **$1,000,000.**

Wyoming—Bureau Reclamation Dpt. Interior, Casper, Alcova Switchyard, Transmission Div., 39 mi. southwest of Casper, Missouri River Proj., Spec. 3120.

Low Bidders & Contracts Awarded

Calif., Livermore—California Research Development Co., 200 Bush St., San Francisco, July 5, 160x220 ft., accelerator bldg. for Atomic Energy Comn., from Dinwiddie Constr. Co., 210 Crocker Bldg., San Francisco **$450,669.**

Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., constr. Carter Lake pressure tunnel, Estes Park-Foothills power aqueduct, Colorado Big Thompson Proj. Spec. 3081, to K. S. Mittry Constr. Co., 4801 San Fernando Rd. West, Los Angeles, Calif., **$1,066,940.** Bids 6/27 awarded 6/29.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Calif., Lakewood—Joseph K. Eichenbaum, c/o Albert C. Marton & Assocs., archts., 333 S. Beaudry St., Los Angeles, Lakewood Center shopping dist., **$30,000,000.**

Tex., Dallas—Bids Asked—Adolphus Hotel, c/o L. P. Corrigan, Mercantile Bank Bldg. 24 story hotel addn. $5,500,000. Wyatt C. Hedrick, 904 Fort Worth Ave., archt.

Low Bidders & Contracts Awarded

Ill., Chicago—Southern Cotton Oil Co., 4401 W. 31 St., Zone 23, design and construct steel, concrete, brick food processing plant, to The Austin Co., 510 N. Dearborn St., Zone 10, **$3,000,000.**

C-E REHEAT BOILERS

SEWAREN GENERATING STATION

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

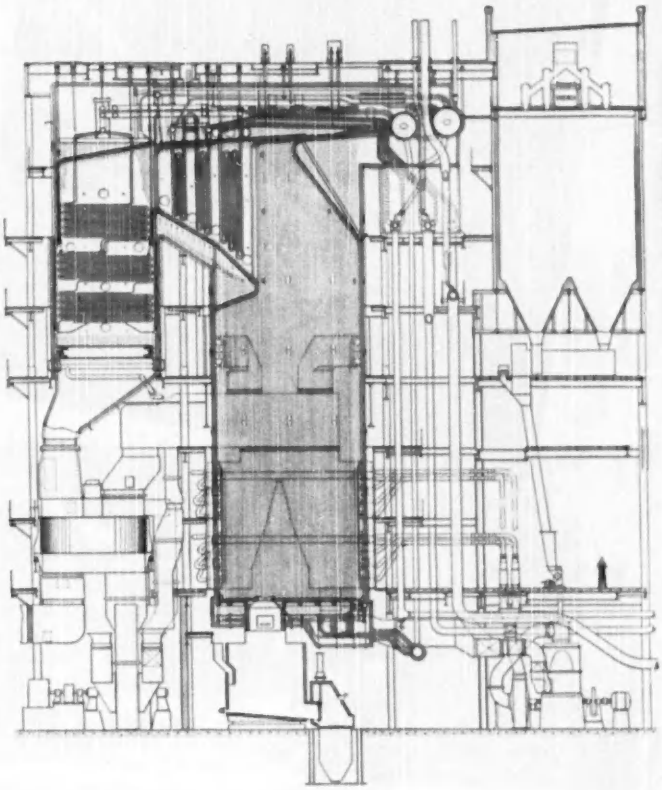
The C-E Unit illustrated here is now in process of erection at the Sewaren Generating Station of the Public Service Electric and Gas Company at Sewaren, New Jersey.

It is a reheat unit designed to serve a 125,000-kw turbine generator operating at an initial steam pressure of 1500 psi at 1050 F reheated to 1000 F.

The unit is of the radiant type with a reheater section located between the primary and secondary superheater surface. A finned tube economizer is located below the rear superheater section, and regenerative air heaters follow the economizer surface.

The furnace is fully water cooled, using closely spaced plain tubes except in the roof section, where finned tubes are employed. It is of the slagging-bottom type, discharging to a quenching hopper.

Pulverized coal firing is employed, using bowl mills and tilting tangential burners. Provision is made to use oil and natural gas as alternate fuels. B-417



C-E

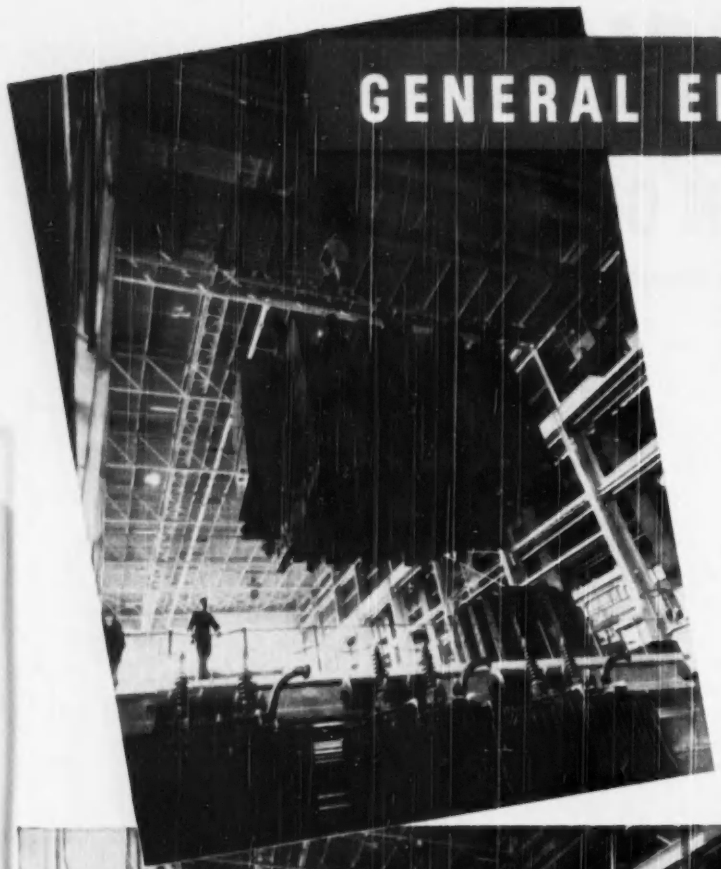
COMBUSTION ENGINEERING—SUPERHEATER, INC.

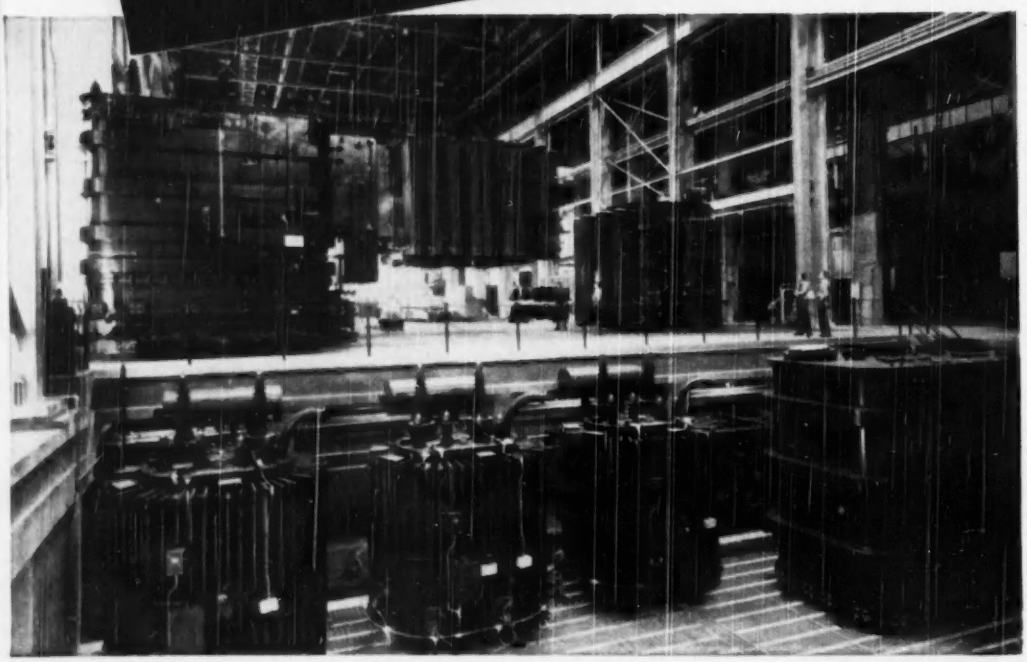
200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS

GENERAL ELECTRIC

Lifts the Limit





1,550 KV B.I.L.

With these new manufacturing and commercial testing facilities, we are now ready to build transformers with a B.I.L.* of 1,550 kv, corresponding to operating voltages far exceeding any in use today. We have already built a 360,000-volt power transformer which we thoroughly tested, disassembled, rebuilt and completely retested, to verify design data. This transformer has a B.I.L. of 1,550 kv full-wave and 1,785 kv chopped wave. It successfully withstood repeated impulse tests at both of these values, which we believe to be the highest ever attained on a complete transformer.

*Basic Impulse Insulation Level.

250,000 KVA

With these new facilities we are ready to build transformers with ratings up to 250,000 kva at voltages above 138 kv. Such transformers can be completely and adequately tested *after* assembly—two 250-ton cranes are available to move them into the test area. Shipment limitations are eased by new 16-wheel drop-center railway cars built to our specifications. These cars will handle 336,000-pound units—about one-third heavier than the largest shipment made to date.

on Transformer ratings

with unrivaled facilities and know-how

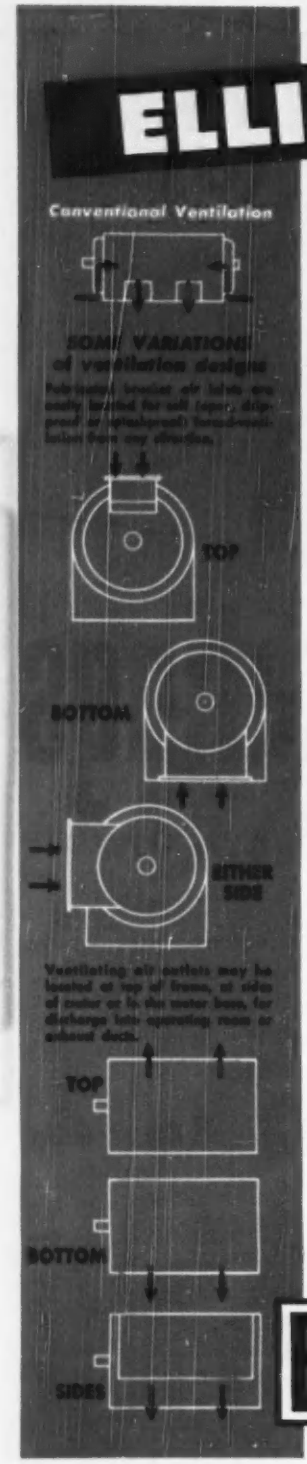
We are just completing a several-million-dollar expansion of our large power transformer facilities. With the greater floor space, the higher bays, and the largest cranes in the electrical industry—shown at left—production capacity has been more than doubled. Equally important, transformers can now be built in much higher ratings.

If the economics of your system call for higher-rated units like these, contact your General Electric sales engineer. We have anticipated your needs and are ready and able to do the job with you. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

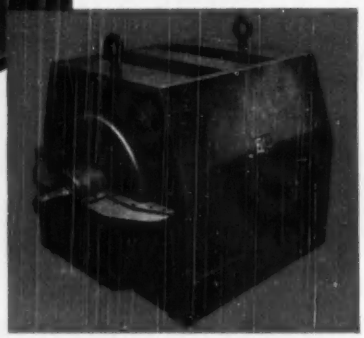
ELLIOTT MOTORS

. . . can be tailored to the job without sacrifice of standardization



◀ Elliott welded frame construction makes "special" adaptations easy. This 2000-HP motor replaces a 1250-HP motor, same space, same foundation. Note extended feet to match existing foundation bolts.

Another "tailored" motor, thanks to welded steel frame construction. Splashproof protected air inlets; top air discharge; minimum headroom; and large built-in oil reservoir for protection in emergency.



Welded Steel Construction

. . . is the answer. Beside giving exceptional *strength*, *stiffness*, *lightness*, this Elliott-developed construction provides ample opportunity to adapt standard electrical motor design and internal parts to special frame and ventilation arrangements.

Consider ventilation; the small drawings at left show how air inlets and outlets can be arranged to fit the need. How these designs are carried out is exemplified in the larger picture at top, showing stator frame construction, with end inlet and top outlet—and showing also how this welded construction adds the rigidity and strength which insures long-life service.

ELLIOTT FABRI-STEEL two-pole induction motors are built in ratings from 350 to 4000 hp; drip-proof, splash-proof, outdoor splash-proof, enclosed separately (forced) ventilated, enclosed self (pipe or base) ventilated, enclosed self-ventilated with built-in coolers. They have unusual features for exceptionally easy maintenance, such as split-sleeve bearings (removable without disturbing bearing brackets), and light but rigid one-piece steel bearing brackets, which facilitate easy removal of rotor, without moving motor from base. Fully described in Bulletin PB 7000-1—on request, write to

L-803

ELLIOTT COMPANY

DEPT. EN, RIDGWAY DIVISION, RIDGWAY, PA.

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DISTRICT OFFICES IN PRINCIPAL CITIES

NEWS ABOUT PEOPLE

Missouri Valley Group Names Shutts President

(See Front Cover)

Edward L. Shutts, president of Iowa Southern Utilities Co, has been elected president of the Missouri Valley Electric Association. Gordon W. Evans, vice president and general manager of Kansas Gas & Electric Co, is the association's new vice president.

Shutts has been president, director, and treasurer of the Iowa utility since 1937. He also has served as president and director of Southern Iowa Railway Co since its incorporation in 1942. He joined Iowa Southern Utilities in 1917 as assistant auditor and was auditor and assistant secretary from 1921 to 1937.

Evans joined Kansas G&E in 1947 and was made vice president the following year. Earlier he worked for Public Service Co of Oklahoma and Oklahoma Power & Water Co and was president of Missouri Edison Co and East Missouri Power Co.

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Reynolds, Wood Named by Birmingham Electric

Joseph M. Reynolds and Claude E. Wood have been named to executive offices in Birmingham Electric Co by the board of directors.

Reynolds, who has been assistant to the president, was elected vice president

JOSEPH M. REYNOLDS

as well as assistant secretary and assistant treasurer. Wood, assistant secretary and assistant treasurer, succeeds E. P. Berry as secretary and treasurer.

CLAUDE E. WOOD

Reynolds joined the company in 1922. He has been auditor, executive assistant, and assistant to the president of Birmingham Electric.

Wood, who joined the utility in 1919, has been assistant secretary and assistant treasurer since 1945.

Berry has retired after 45 years' service. He was elected secretary and treasurer in 1934 and became a director in 1945.

•

Philip C. Pray has been appointed superintendent of the northeastern division of the New England Power Co with headquarters at Lawrence, Mass. He succeeds the late **John W. Keeney.** Pray has been with New England Power since 1920. **Ronald P. O'Hanley** has been appointed personnel director for the New England Electric System companies in the Mystic Valley area of Massachusetts. He will continue to handle public relations for the Malden companies. **Elmer C. Stevens** has been named personnel representative for NEES companies centering in Lowell, Mass. In addition to his job as power sales supervisor for NEES companies at Salem, Mass., **Fred Donovan** will take on the duties of personnel representative in his area.

D. W. McLenegan, with General Electric since 1922, has taken over responsibility for the operation of GE's graduate school of nuclear engineering at the Hanford Works, Richland, Wash., in addition to his present duties as manager of the technical personnel office. **F. Ellis Johnson,** who had headed the school, has retired.

Curtis Lighting Selects 2 New Vice Presidents

W. V. C. Foulks has been elected vice president in charge of engineering

W. V. C. FOULKS

for Curtis Lighting, Inc, Chicago, and A. W. Carlson, vice president in charge of production.

Foulks has been with Curtis since 1921. Active in the Illuminating Engineering Society, he is a past vice president of the Midwestern region and a past chairman of the Chicago Section. He is the author of a number of technical papers and articles.

Carlson has been in the lighting industry since 1925. From 1940 to 1943 he was factory manager of Revere

A. W. CARLSON

Electric Manufacturing Co. He want to Curtis in 1948 from American Phenolic Corp, where he was manager of the electronics division.

Rochester G&E Names Alling Sales Manager

Sydney Alling, manager of industrial and commercial sales for Rochester Gas & Electric Co. has been made general sales manager, a newly created post.

Alling has been with the company for 39 years. Named to assist him were Walter G. McKie, manager of domestic sales; R Dewitt Pike, manager of industrial and commercial sales; J. Gordon Ross, manager of service and customer relations; and Donald K. Smith, manager of gas heating sales.

•

Robert S. Neblett has been appointed assistant manager of sales of the turbine divisions of General Electric Co's Apparatus Department. He has been assistant general manager of the company's Nucleonics Department since 1948 and early this year was made business and construction manager of the Knolls Atomic Power Laboratory at Schenectady. Neblett jointed GE in 1923. In World War II he was manager of the Federal and Marine Divisions, and after the war he administered the company's Nucleonics Project.

Thornton Easler, superintendent of San Francisco's electric power system, retired June 30, after 33 years' service. **B. W. Grethel,** an engineer with the city since 1936, will succeed Easler temporarily until a civil service examination is held to fill the position.

Hugh M. Nazor has been named vice president in charge of sales for the Smithcraft lighting division of A. L. Smith Iron Co. For the past 14 years he has been with Graybar Electric Co in various capacities, including manager of the Akron, Ohio, and Syracuse, N. Y., branches.

Robert M. Peabody has been named chief electrical engineer of the Metropolitan Water District of Southern California replacing **J. M. Gaylord,** who has retired. Peabody had been with the engineering staff since 1933. Gaylord had held his position since the water district was created in 1930.

Edgar C Alger, chief electrical designing engineer of the Fore River Shipbuilding Division, Bethlehem Steel Co, Quincy, Mass., retired July 1. He joined the company 46 years ago as an apprentice electrician.

Russell F. Pabst has been named director of industrial relations of Kansas Gas & Electric Co. He has been a public relations, advertising, and sales promotion consultant with Ebasco, Inc, for the past 13 years. Pabst started with Penn-Ohio Power & Light Co, Youngstown, Ohio about 30 years ago. There he worked in the treasury department and later in the commercial department. He spent six years in sales promotion work for Monongahela West Penn Public Service Co.

Robert A. Sovik, sales engineer for Copperweld Steel Co's wire and cable division in New York State and part of Pennsylvania, has been elected president of the New York State Society of Professional Engineers. Last year he was first vice president. He also is a director of the national society.

David F. Shaw has been appointed manager of Hanford Operations in the atomic energy program. For the past three years he has been assistant manager and deputy manager of the Hanford office. Shaw worked for Tennessee Valley Authority on construction of three major dams and then was engineer in charge of design and erection of aggregate and mixing plants of Birmingham, Ala., Slag Co. From 1941 to 1946 he served in the Army Corps of Engineers and in 1946 was named chief security officer of the Manhattan Engineer District.

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New Assignments

Several new appointments have been reported by General Electric Co. **J. P. Keller** has been made assistant to the manager of the industrial divisions. He will be succeeded as superintendent of generator and turbine bucket manufacturing for the turbine divisions by **L. E. Newman.** Newman has been assistant manager of the Lynn, Mass., turbine and gear sales division. **Floyd C. Pickett** has been advanced from works superintendent to assistant to the works manager at Fitchburg. . . **L. R. Burrow** has been appointed manager of the Weatherford, Texas, municipal power plant. He succeeds **Alto Cumming,** who resigned to go into private business. . . **K. A. Home** has been appointed district manager for Pacific Power & Light Co at Hood River, Ore. He succeeds **C. O. Bunnell,** who has retired. Home will be succeeded as Dayton, Wash., manager by **Tom Teenan,** the company's assistant general manager at Walla Walla, Wash., for the past year. . . **C. A. Krantz,** former manager-engineer of the Petersburg, Alaska, municipal power department, has been appointed outside superintendent for Sitka Public Utilities, Sitka, Alaska. . . **Donald L. Harwood** has been appointed purchasing agent for Fairbanks, Morse & Co, Chicago. He has been with the company since 1926 and has been assistant purchasing agent for several years. . . After about eight years as superintendent of Avon River Power Co, Windsor, N. S., **P. Mellish Lane** has been transferred to the headquarters offices of the parent company, Nova Scotia Light & Power Co, Halifax, as operations engineer.

OBITUARY

Glenn C. Hyde, 68, president of Gulf Public Service Co, New Iberia, La., died in Dallas, Texas, June 23. He helped to form the company following the merger of the former Gulf Public Service Co and Louisiana Public Utilities Co.

William Allen Beckett, 73, retired chief engineer of the Georgetown plant of Puget Sound Power & Light Co, died recently in Tacoma, Wash.

Charles L. Smiddy, 59, general counsel for Hartford Electric Light Co and Connecticut Power Co. died July 3.

Leonard H. Birkett, 59, general sales manager of Combustion Engineering Corp, Ltd, (Canada), since 1933, died in Montreal June 27. He joined The Superheater Co, Ltd. in 1921 and served as sales manager of its industrial division.

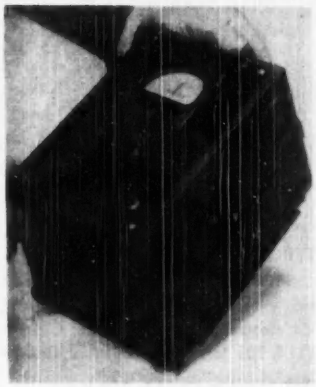
Samuel Firestone, 45, an electrical engineer in charge of planning at the Birmingham office of Detroit Edison Co, was killed in an automobile accident near Detroit July 5.

Louis W. Rawson, 79, designer of the clutch bearing his name, died at Worcester, Mass., July 12. He had been director of the Washburn shops of Worcester Polytechnic Institute and since 1933 had been a consulting engineer.

Lucian H. McIntire, 93, a pioneer electrical engineer connected with transit developments in New York, Philadelphia, and other Eastern cities, died recently at Rutland, Vt. At one time he was a consulting engineer for the Hanna Midwest steel interests.

Arthur Ludt, 56, a contract engineer for Combustion Engineering-Superheater, Inc, died July 12. He joined the company in 1919 after working for Babcock & Wilcox Co and Wheeler Condenser & Engineering Co.

NEW EQUIPMENT



Ground Resistance Tester

MEASURABLE with the Vibroground Model 263 are soil, anode and circuit resistances, and polarization effects. It is claimed to be capable of measuring true resistance to earth of man-made grounds, irrespective of earth resistance and conditions. It is further said that the instrument circuit has the ability to discriminate in accepting only currents from its own power supply (8 flashlight batteries) for measurement. Output is 125 v.

Ranges have been incorporated for accurate readings in soil varying in resistivities from 0 to 1,195,000 ohms per cu cm at 10 ft or greater spacings. Resistance ranges are 0-1, 0-10, 0-100, 0-1,000 ohms, and measurements can be made by the 2, 3, or 4-electrode method.

Associated Research, Inc, 3760 W. Belmont Ave, Chicago 18, Ill.

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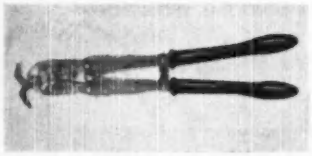

Insulated Tools

HIGH dielectric strength in tools for "live" work is reported to be maintained over the range of working temperatures, and in presence of moisture, oil or acid fumes, by Cohardite insulation. Tools in the line include: Meterman's screwdrivers (factory tested to 5,000 v), standard screwdrivers and socket wrenches (tested to 10,000 v) and wire cutters and firemen's cutters (tested to 20,000 v). Wirecutter is illustrated.

H. K. Porter, Inc, Somerville, Mass.

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Splash-Proof Motor

PRINCIPAL FEATURE of a new line of motors, rated from ½ to 15 hp, is the splash-proof design. Built with single or double reduction gears, they provide speeds from 20 to 780 rpm. One-piece cast end bells permit free passage of air through the motor but prevent splashing liquids from getting inside the motor. This is an addition to the line of Slo-Speed geared electric power drives.

Sterling Electric Motors, Inc, Telegraph Rd at Atlantic Blvd, Los Angeles 22, Cal.

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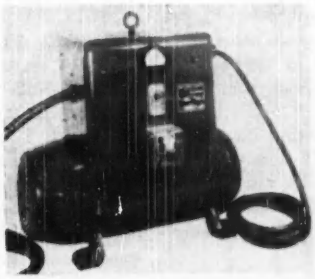
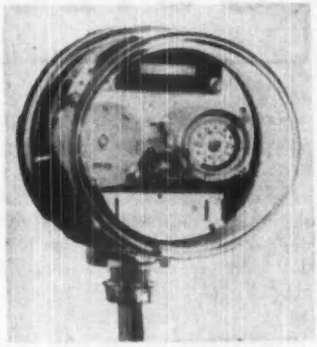


Truck Battery Charger

SINGLE CIRCUIT charger Model 669-6-1 has been announced for charging a 6-cell lead-acid battery of up to 300 amp-hr capacity. It is built as an integral unit, and claimed to be 100% automatic in operation, and completely charge batteries in 8 hr or less.

A temperature compensated voltage relay operates when the battery is 80-90% recharged. This relay closes to apply ac to the time clock motor. At the end of the present time period to which the clock is set, or when it reaches zero hours, it de-energizes the magnetic coil of the motor starting switch, shutting down the set, disconnecting ac from the time clock, and opening the battery charging circuit.

Motor Generator Corp, Hobart Sq, Troy, Ohio



Water Heater Control

SYNCHRONOUS MOTOR driven Type MN time switch for electric water heater control has been designed for easy installation at minimum cost. It is furnished with a nipple and collar for mounting on a ¾-in. knockout on meter service cabinets. The 18-in. leads are furnished with lug connectors on the line side. On-off operations are performed on a repetitive schedule only, with an interval of 1¼ hr between successive operations.

Sangamo Electric Co, Springfield, Ill.

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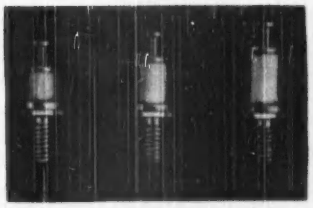


Insulated Terminals

THREE new miniature insulated terminals feature small size combined with appropriate dielectric properties. Designed to meet miniaturization programs, the terminals are available in three lengths of dielectric and with voltage breakdown ratings up to 5,800 v. Smallest terminal has an over-all height of ⅜ in. Insulators are grade L-5 ceramic that has been silicone impregnated for maximum resistance to moisture and fungi.

Cambridge Thermionic Corp, 461 Concord Ave, Cambridge 38, Mass.

ELECTRICAL BUSINESS OUTLOOK

THE KOREAN WAR HAS ASSURED GOOD BUSINESS FOR THE REST OF 1950. AND PROBABLY FOR 1951. That much is clear no matter what the outcome of the immediate fighting. The Korean campaign alone has already added several billion to the prospective military budget. And that will offset any letdown that might take place in industries like autos and housing.

Actual military spending and production of weapons will move up only slowly. Letting contracts takes time. But the civilian reaction to this added demand is immediate. With the economy already stretched taut, shortages are a clear threat. Business men will start to build inventories and hurry up construction.

Once this process starts, there's no telling how frantic demand for metals and construction materials will get. Major producers may hold the price line on some products. But pressure will be building up by the year-end, when steel producers must sign a new wage contract.

Meanwhile, production will rise slowly throughout industry. In most lines, we are already close to a production ceiling. The Federal Reserve index will rise only a few points over the next several months. But this is in sharp contrast to earlier expectations of a drop in housing, autos, and steel.

FOR THE POWER INDUSTRY ONE FACT STANDS OUT: THERE WILL BE NO SLUMP IN PRODUCTION OF STEEL OR NON-FERROUS METALS. Capacity operations in these fields account for much of current record power output. And they were most vulnerable to a decline in demand for automobiles or construction. But military and industrial stockpiling, new plant and equipment programs, and perhaps a new rush to buy consumer durables are new factors which will keep the metal plants humming.

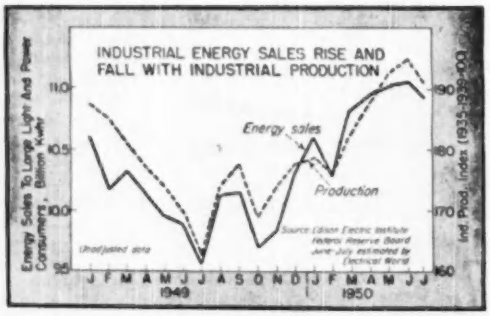
Other big power consuming industries are also affected by the defense speed-up. Basic chemicals, petroleum products and paper for containers will all be needed for military programs. After July vacations, production will resume its record pace.

THIS MEANS AUGUST INDUSTRIAL ENERGY SALES WILL EQUAL OR EXCEED THE JUNE TOTAL OF OVER 11 BILLION KWHR. And they will keep on rising. It will be a slow rise because industrial production is so close to capacity now. Also power use gains more slowly near peaks, as it did from March to June this year (chart). But it's now clear that sales will push upward from the recent peak, instead of falling off sharply.

A rise from this level is unprecedented. Industrial power use is running as high in summer as in winter, despite vacations. It's above the previous peaks made in January, 1950 and January, 1949. The reason for this unusual trend is the return of industrial production to near capacity.

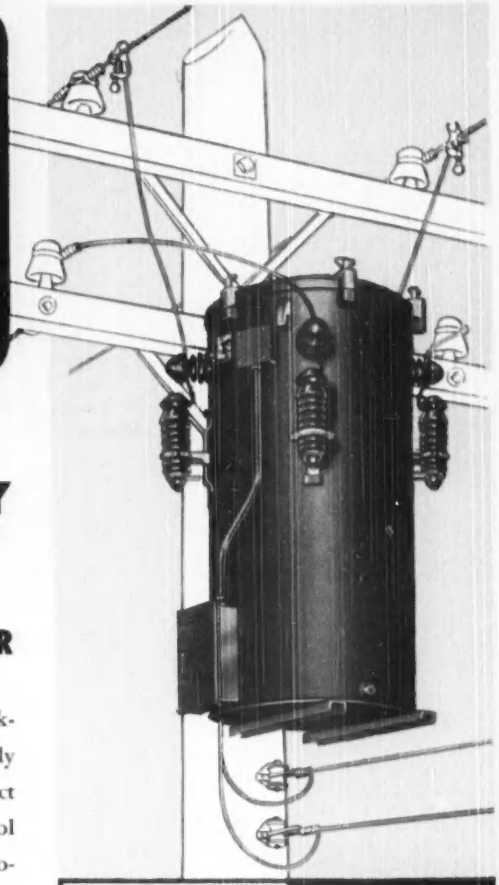
WHAT WILL HAPPEN TO PEAK LOAD THIS WINTER IF SALES TO INDUSTRY KEEP UP LIKE THIS? Residential use is also rising rapidly owing to completion of over a million new homes this year, and to record sales of electric home appliances. Clearly THE 1950 PEAK WILL BE MUCH HIGHER than any previous year, and significantly higher than previously expected.

In May, the Edison Electric Institute semi-annual power survey estimated that peak load for the country in 1950 would increase 8.3% over 1949. ELECTRICAL WORLD NOW ESTIMATES THAT PEAK WILL SHOW A 10.3% GAIN OVER 1949 IF THIS INDUSTRIAL ACTIVITY CONTINUES. THIS WOULD REDUCE RESERVE CAPACITY TO THE 1948 LEVEL DESPITE RECENT NEW CONSTRUCTION. Thus the industry will enter 1951 with 1) a tighter reserve position than anticipated; 2) every indication that industrial activity will continue gaining and call for further increases in power supply during 1951; and 3) a possibility of even more military activity and strain on our resources if the international situation grows worse. In these circumstances, capacity needs for '51 will have to be reconsidered and possibly, revamping of plans for future years will be necessary.



WHY INDUSTRIAL POWER SALES will stay high can be seen by looking at these two curves. The rise so far in 1950 has been right in step with industrial production. New military orders will keep industry running at or above present levels well into 1951

Cut Installation Costs ...Save 2/3 of Installation Time... Improve Appearance



WITH

THE NEW MOLONEY "packaged-unit" CONSTANT CURRENT TRANSFORMER

Save time and money with the new Moloney "Packaged-Unit" Constant Current Transformers. Simply hang the "Packaged-Unit" on the pole . . . connect primary and secondary leads . . . connect the control line . . . *and that's all!* Comes complete with all protective and control equipment incorporated as a part of the transformer to permit unit installation. No separate installations of lightning arrestors, primary fuse cutouts, oil switches or protective relays.

Write today to Moloney Electric Co., St. Louis 20, Mo., for Bulletin SL-702 giving complete information.

Sales offices in all principal cities

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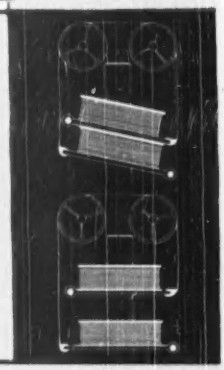
MOLONEY
ELECTRIC COMPANY
FACTORIES AT ST. LOUIS 20, MO.
AND TORONTO, ONTARIO, CANADA

EXCLUSIVE MOLONEY FEATURE

Both coils move on Moloney transformers. Each coil moves only half the distance required by the moving coil of a single-moving-coil type regulator, on starting or during changes in load. This means quicker response...longer lamp life. Diagram shows starting position (above) and half load position (below). Bottom and top coil move apart simultaneously.



MOLONEY ELECTRIC

New $850 regulator makes 10% voltage correction pay off!

Pays Up to 90% Dividend Yearly on Rural Lines

CORRECTION OF 10% low voltage pays off . . . *IF you can get inexpensive regulation* Up to now this was only possible on urban lines. But the new Allis-Chalmers pole-type 5/8% step regulator priced at only $850 makes 10% correction pay off now on rural lines too.

Some operators don't fully realize the hidden loss from low voltage. Cutting voltage only 10% may cut power consumption and revenue 15% on incandescent lighting loads. In fact, during the war time power pinch, a few utilities spread their power by cutting voltage. Conversely, correction of low voltage increases kwh consumption and revenue.

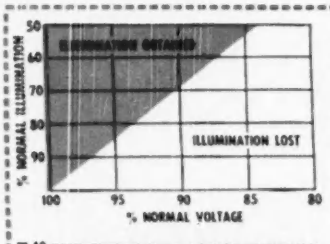
Take a feeder with 10% low voltage carrying a typical rural load. Yearly revenue can be increased as much as $768 for every 200 customers by raising voltage 10%.

On many rural feeders voltage is 10% low today. There is no reason for continuing to take these revenue losses now that the new Allis-Chalmers 10.8 kva, 15 amp, 7200 v, pole-type regulator with its ±10% regulation is available.

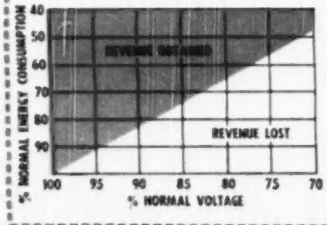
Get the facts! Let Allis-Chalmers engineers help you analyze a study of your system. Call your nearby A-C Sales Office.

A-3052

ALLIS-CHALMERS, 932A SO. 70 ST.
MILWAUKEE, WIS.



Correction of 10% low voltage increases revenue from lighting 19% —But up to now this was too expensive on rural feeders. New low cost regulator makes correction pay off.



10% low voltage cuts illumination 30% . . . 15¢ of every dollar for lighting is lost. In addition, cooking and heating water electrically take 22% longer.

ALLIS-CHALMERS

"Originators of 5/8% Step Regulators!"